

Indiana Trauma Registry

Statewide Quarter 1 Data Report

January 1, 2017—March 31, 2017

7,805 Incidents

92 Total Hospitals Reporting

Level I and II:	10 facilities	49.6% of data
Level III:	10 facilities	16.5% of data
(Non-Trauma) Hospitals:	72 facilities	33.9% of data

For Quarter 1 2017 which spanned from January 1, 2017—March 31, 2017 there were 7,805 incidents reported to the Indiana Trauma Registry at the Indiana State Department of Health. There were 92 hospitals that reported data, of which 10 were level I or II trauma centers, 10 were level III trauma centers and 72 were non-trauma centers. There were 9 hospitals that either started to report again or were new to reporting during this quarter compared to the previous quarter, while 8 hospitals dropped off from reporting. A map of the state with the reporting hospitals can be found on page 17. Trauma centers represented 66% of the data. There were 2,566 incidents reported for January, 2,479 reported for February, and 2,760 incidents reported for March.

The content of this report has changed due to suggestions and additions requested by the Indiana State Trauma Care Committee at the April 21, 2017 meeting. Explanations of the changes requested and adapted from the ISTCC meeting can be found on page 18.

Some general reminders include that the blue columns represent an Indiana average, red columns represent level I and II trauma centers, green columns represent level III trauma centers and orange non-trauma centers. If a single percent is listed above a group of bars, the percent listed represents the average for Indiana. If a number is listed above a group of bars, it represents the count for Indiana. The category ‘All Transfers’ denotes the patient group where ED Disposition = Transferred to Another Hospital. **The category ‘Linked Transfers’ represents the patient group for whom the initial hospital and final hospital information could be linked.**

Definitions:

Direct Admit: Patient is admitted directly to the hospital and does not spend time in Emergency Department. The ED Length of Stay should reflect a direct admittance.

External Cause of Injury: ICD-10-CM codes that are used to describe the mechanism or external factor that caused the injury event.

Trauma Type: The classification of the force applied to the body. Trauma type categories include blunt, penetrating, thermal, and other trauma.

Injury Severity Score: An anatomical scoring system defined as the sum of the three highest squared maximum Abbreviated Injury Scale (AIS) values to account for multiple injuries in the six body regions.

Formulas:

Acronyms:

ED: Emergency Department	MVC: Motor Vehicle Collision
ICU: Intensive Care Unit	OR: Operating Room
ISS: Injury Severity Score	Ps: Probability of Survival
LOS: Length of Stay	Level I, II and III: Verified and In
NTC: Non-trauma Center	Process Trauma Centers
	CAHs: Critical Access Hospital

Calculations:

$Ps = 1/(1+e^{-b})$ where $b=b_0+b1(RTS) + b2(ISS) + b3(Age\ Index)$

Total GCS = Verbal GCS + Motor GCS + Eye GCS

$RTS = 0.94 * GCS + 0.73 * SBP + 0.29 * RR$

$ISS = (AIS)^2 + (AIS)^2 + (AIS)^2$



Indiana State
Department of Health
Trauma and Injury Prevention

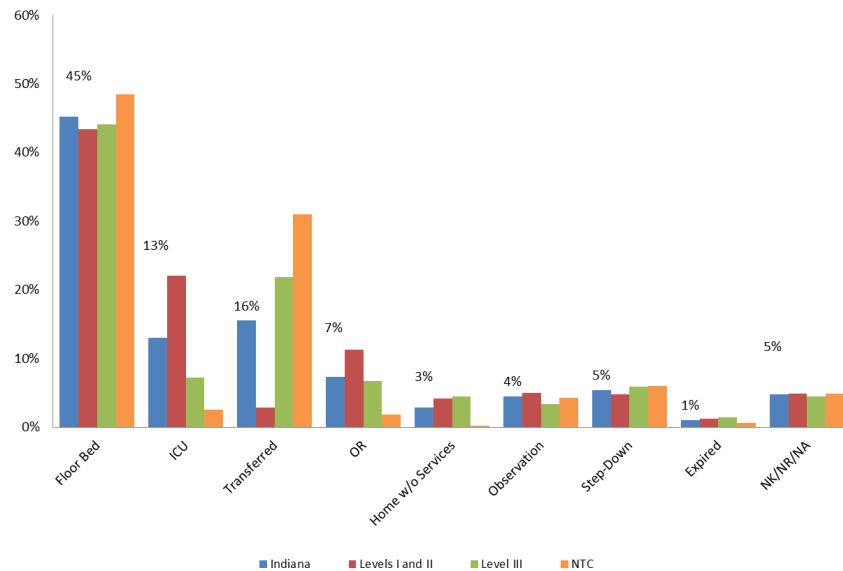
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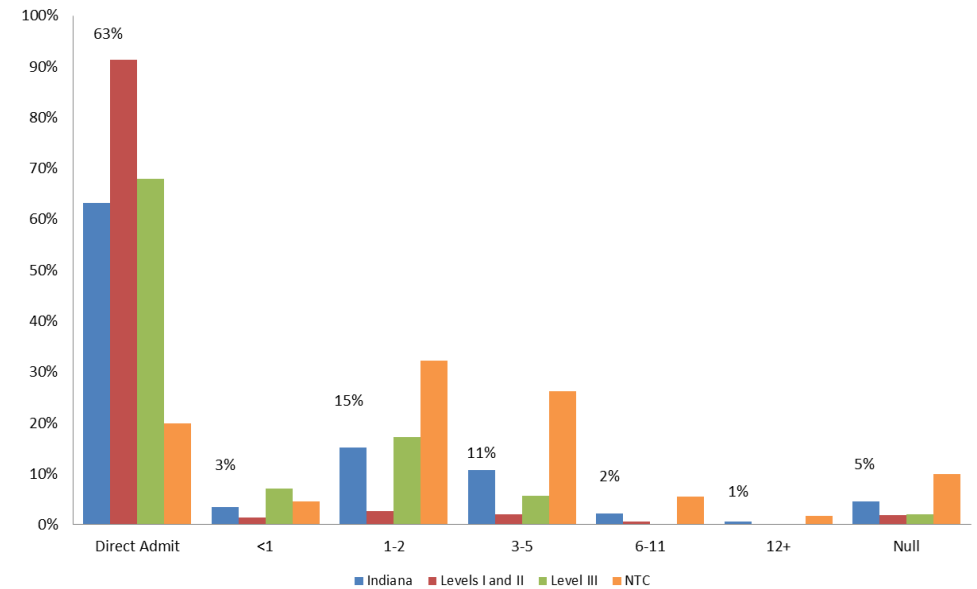
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ED Disposition by Percentage



ED Length of Stay (Hours)



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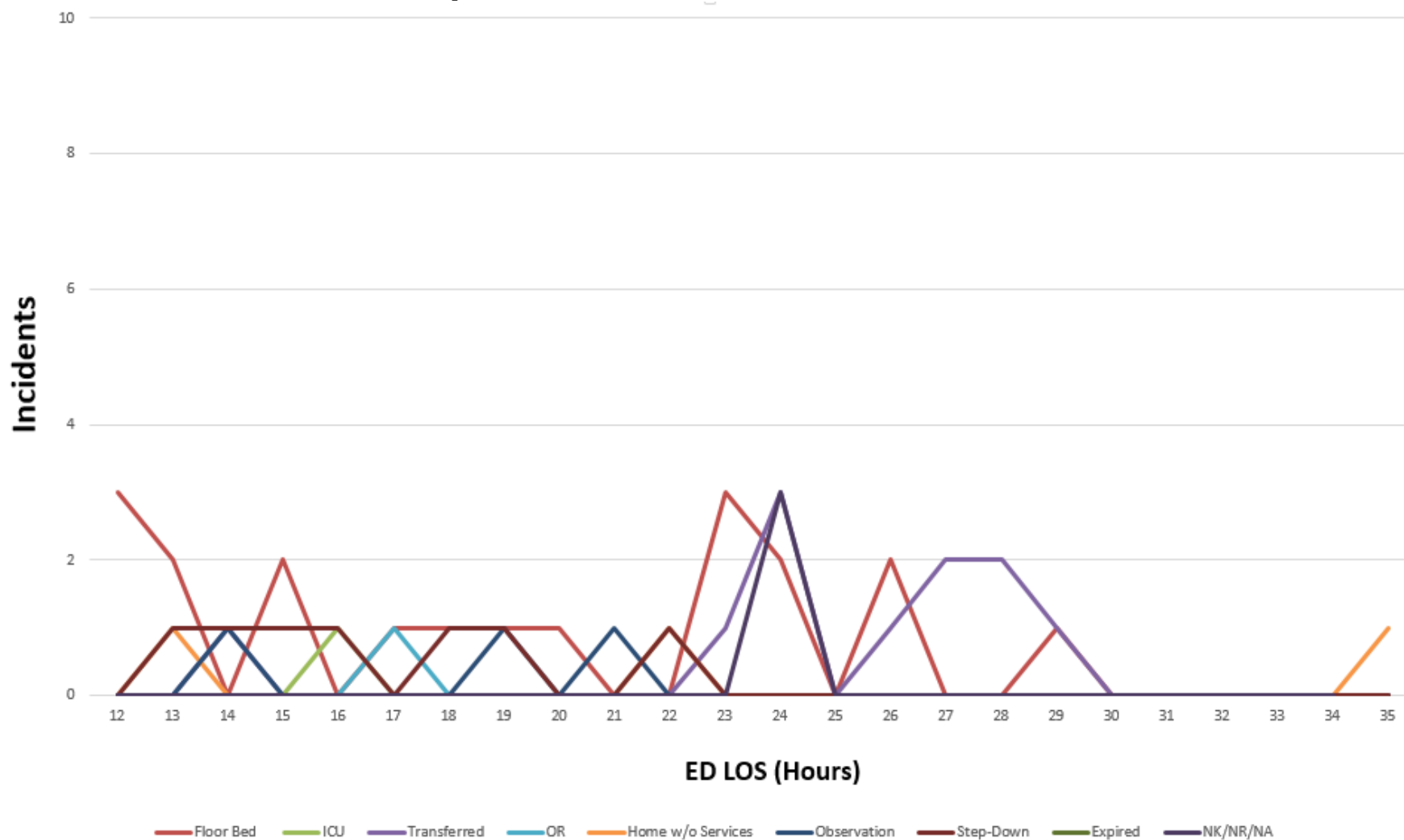
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ED Disposition for ED LOS >12 Hours



N=48

*No cases expired

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ED LOS > 12 Hours, N=48

Facilities	2 Level I and II 46 Non-trauma Centers	Region	17 North; 16 Central; 9 South; 6 Unknown/ Out of State
Average Distance from Scene to Facility	12.7 Miles	ISS	25 (1-8 cat); 16 (9-15 cat); 7 (No ISS)
Transport Type	29 Ambulance; 17 Private Vehicle; 2 Unknown	GCS Motor	2 (1 cat); 1 (5 cat); 34 (6 cat); 11 (unknown)
Cause of Injury	4 Transport; 37 Falls; 1 Overexertion; 1 Unspecified; 5 Not Identified	RTS—Systolic	4 (3-4)
Signs of Life	48 Yes	RTS—Resp. Scale	3 (3-4)
Age	63.8 Years (1-102 Years)	Resp. Assistance	22 Yes; 15 No; 11 Unknown
Gender	33 Female; 15 Male	ED LOS Hours	20.5 (12-35)
Interfacility Transfer	5 Yes; 43 No	ED Disposition	19 Floor; 3 Home without services; 1 ICU; 3 Observation; 1 OR; 7 Step Down; 11 Transferred; 3 Unknown

-Region was created from injury zip code. Missing = no injury zip or injury zip from out of state.

-Numbers represent counts per category or mean with minimum and maximum in parentheses.

-No signs of life is defined as having none of the following: organized EKG activity, papillary responses, spontaneous respiratory attempts or movement, and unassisted blood pressure. This usually implies the patient was brought to the ED with CPR in progress (2015 Trauma Registry Data Dictionary, page 185).

Indiana Trauma Registry

Statewide Quarter 1 Data Report

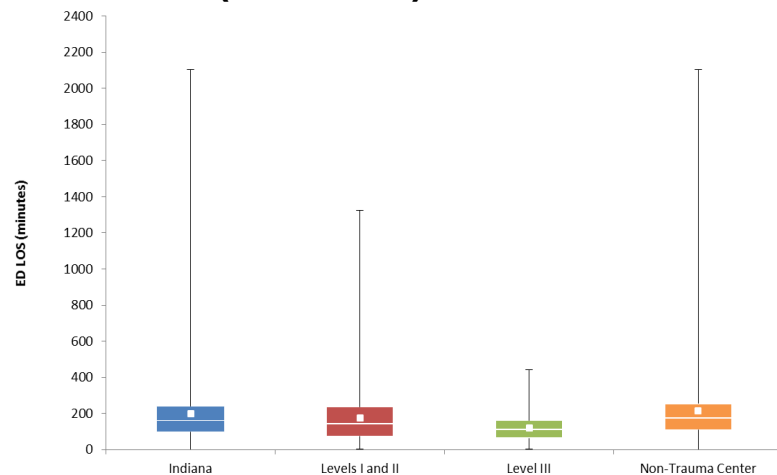
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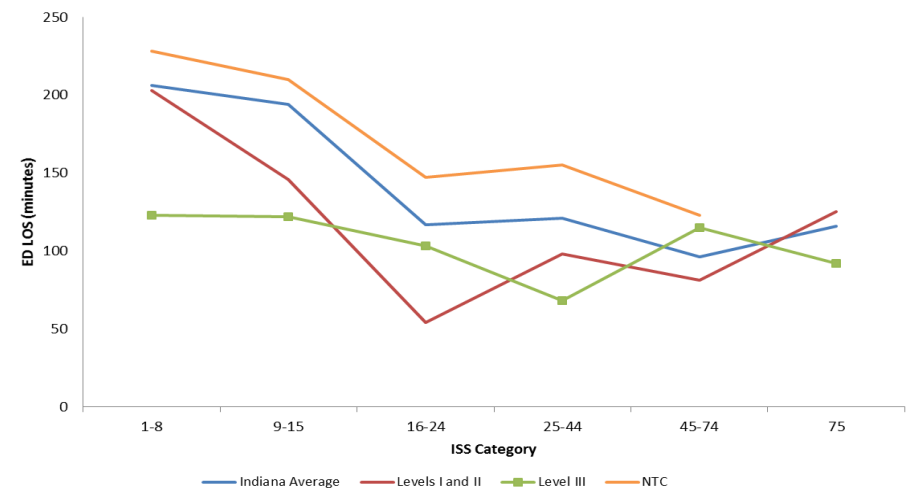
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ED LOS (Minutes) - All Patients



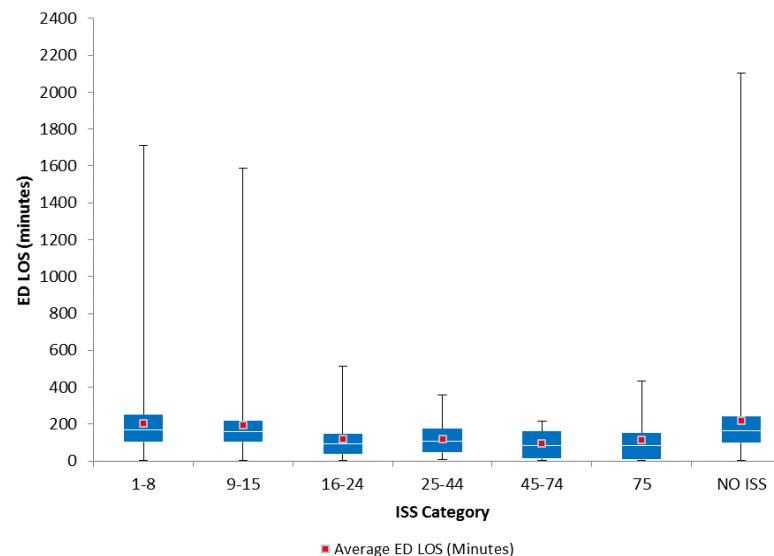
ED LOS (Minutes) by ISS



A table with all the values for ED LOS is found on page 52.

ED LOS (Minutes) by ISS

Note for EDLOS by ISS, there were 9 cases with ISS of 75; none were at a non-trauma center.



A table with values for ED LOS by ISS may be found on page 52

Indiana Trauma Registry

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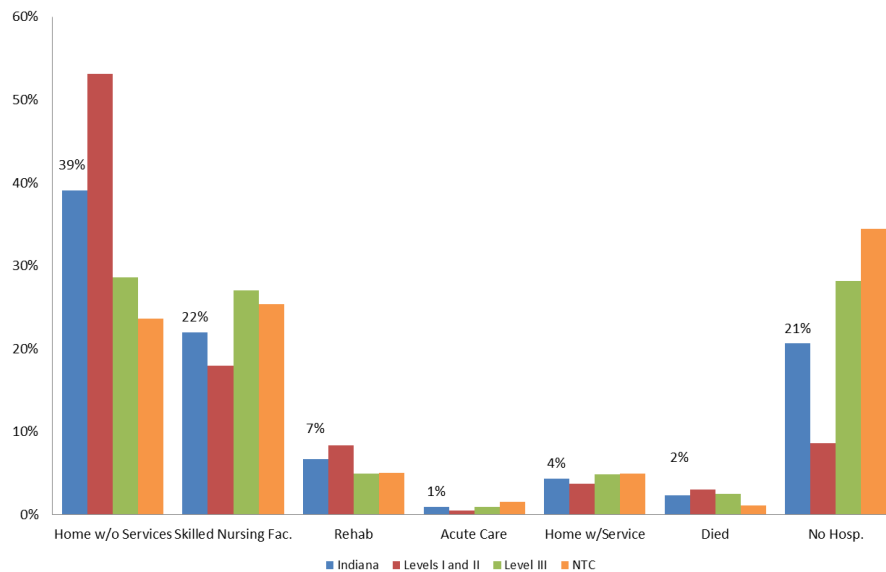
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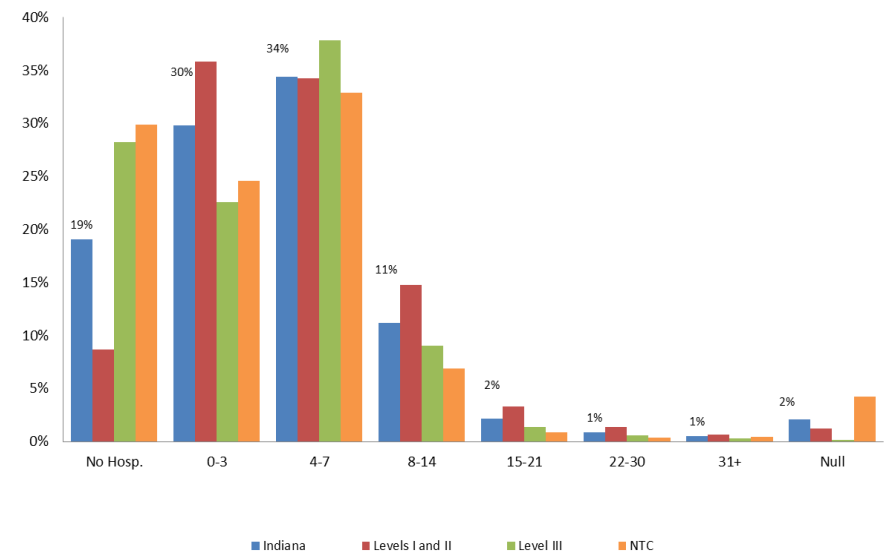
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Hospital Disposition



Hospital Length of Stay (days)



Hospital dispositions with <1% included: Another institution, Null, Psychiatric Hospital, Long-Term Care Hospital and Intermediate Care

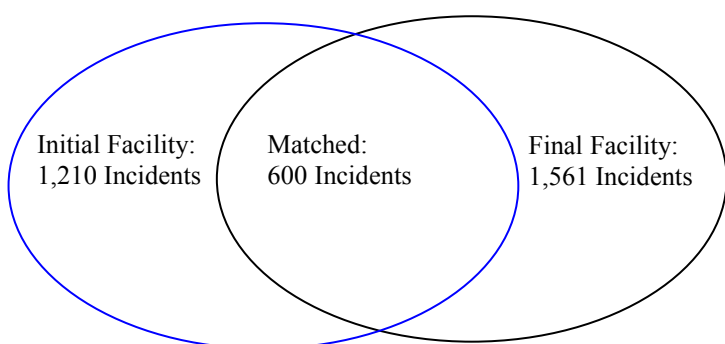
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For Quarter 1 2017, of the 7,805 incidents reported to the Indiana Trauma Registry, 1,210 cases that had an ED Disposition of “Transferred to another acute care facility” at the initial facility or that had the Inter-Facility Transfer equal to “Yes” at the Trauma Center. Of those transferred, 600 cases were probabilistically matched. The linked cases make up 21% of the Q1 2017 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.



The initial facility in which transfers come from may be considered Critical Access Hospitals (CAHs). All Indiana CAHs are considered Rural, and must meet additional requirements to have a CAH designation, such as having no more than 25 inpatient beds and being located in a rural area. Facilities that are highlighted indicate that these facilities reported data for Quarter 4 2016.

Within this transfer data section, the purple columns represent the transfer cases and the single percentages represent the percent for the transfer cases. For two demographic variables, patient age groupings and gender, the Indiana average is included to provide more insight to this transfer population.

Indiana Critical Access Hospitals (CAHs)

Adams Memorial Hospital	Perry County Memorial Hospital
Cameron Memorial Community Hospital Inc	Pulaski Memorial Hospital
Community Hospital of Bremen Inc	Putnam County Hospital
Decatur County Memorial Hospital	Rush Memorial Hospital
Dukes Memorial Hospital	Scott Memorial Hospital
Gibson General Hospital	St. Vincent – Clay Hospital
Greene County General Hospital	St. Vincent – Dunn Hospital
Harrison County Hospital	St. Vincent – Frankfort Hospital
IU Health Bedford Hospital	St. Vincent – Jennings Hospital
IU Health Blackford Hospital	St. Vincent – Mercy Hospital
IU Health Paoli Hospital	St. Vincent – Randolph Hospital
IU Health Tipton Hospital	St. Vincent - Salem Hospital
IU Health White Memorial Hospital	St. Vincent - Warrick Hospital
Jasper County Hospital	St. Vincent – Williamsport Hospital
Jay County Hospital	Sullivan County Community Hospital
Margaret Mary Community Hospital Inc	Union Hospital Clinton
Parkview LaGrange Hospital	Woodlawn Hospital
Parkview Wabash Hospital	

Rural Hospitals

Columbus Regional Hospital	Kosciusko Community Hospital
Daviess Community Hospital	Major Hospital
Fayette Regional Health System	Marion General Hospital
Franciscan Health-Michigan City	Memorial Hospital (Logansport)
Franciscan Health-Crawfordsville	Memorial Hospital & Health Care Center (Jasper)
Good Samaritan Hospital	Parkview Noble Hospital
Henry Community Health	Reid Health
IU Health – LaPorte Hospital	St. Joseph’s Regional Medical Center – Plymouth
IU Health – Starke Hospital	Schneck Medical Center
King's Daughters' Health	

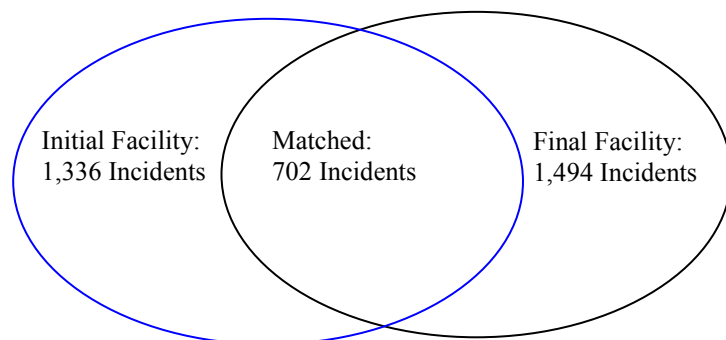
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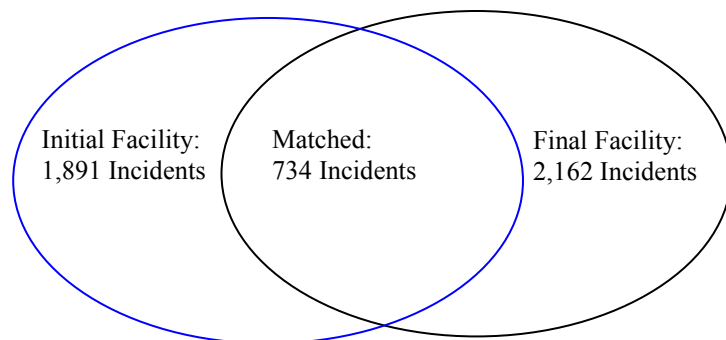
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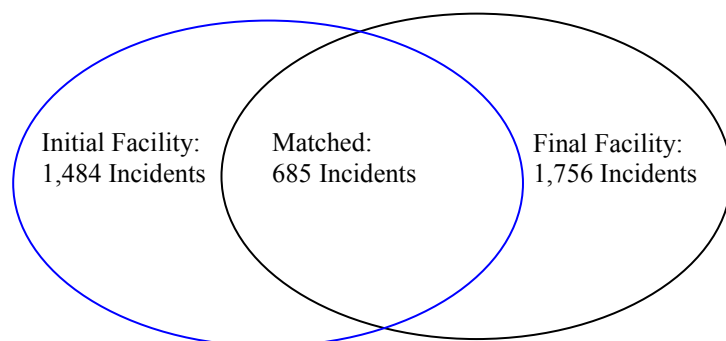
Historical Links



For Quarter 2, 2016, of the 9,188 incidents reported to the Indiana Trauma Registry, 1,676 cases that had an ED Disposition of “Transferred to another acute care facility” at the initial facility or that had the Inter-Facility Transfer equal to “Yes” at the Trauma Center. Of those transferred, 787 cases were probabilistically matched. The linked cases make up 23% of the Q2 2016 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.



For Quarter 3, 2016, of the 8,916 incidents reported to the Indiana Trauma Registry, 1,891 cases that had an ED Disposition of “Transferred to another acute care facility” at the initial facility or that had the Inter-Facility Transfer equal to “Yes” at the Trauma Center. Of those transferred, 734 cases were probabilistically matched. The linked cases make up 18% of the Q3 2016 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.



For Quarter 4, 2016, of the 8,916 incidents reported to the Indiana Trauma Registry, 1,484 cases that had an ED Disposition of “Transferred to another acute care facility” at the initial facility or that had the Inter-Facility Transfer equal to “Yes” at the Trauma Center. Of those transferred, 685 cases were probabilistically matched. The linked cases make up 21% of the Q4 2016 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.

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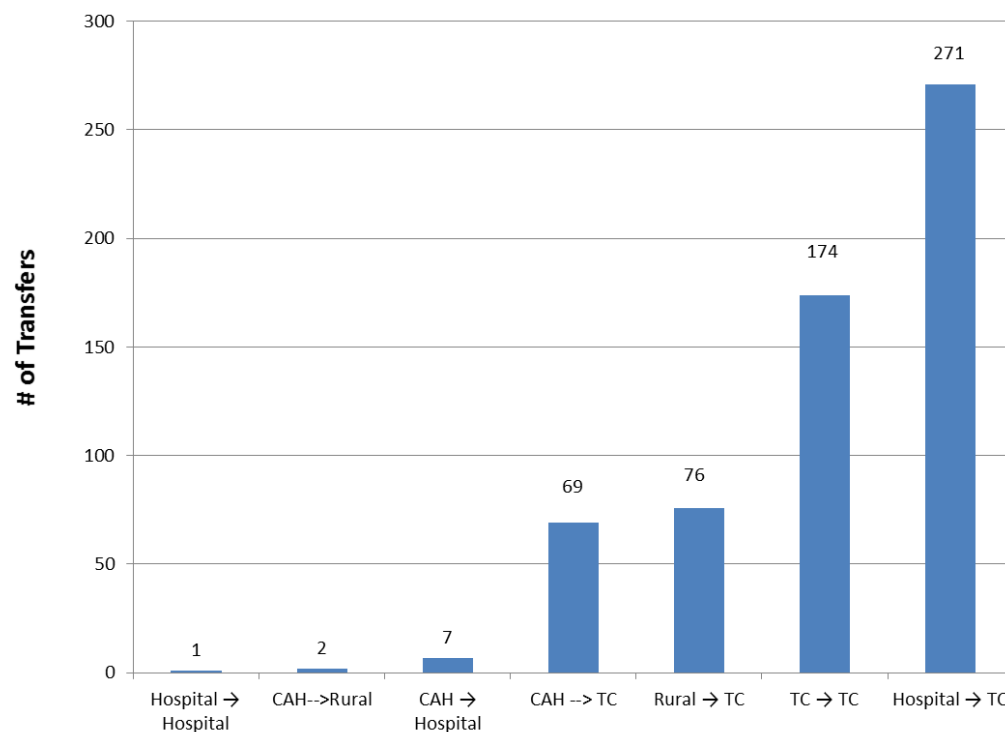
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Facility to Facility Transfers

For Transfer Patients:		
Initial Hospital Type	Final Hospital Type	Incident Count
Hospital	Hospital	1
Critical Access Hospital	Rural Hospital	2
Critical Access Hospital	Hospital	7
Critical Access Hospital	Trauma Center	69
Rural Hospital	Trauma Center	76
Trauma Center	Trauma Center	174
Hospital	Trauma Center	271

Facility Transfer Type



Rural = Rural Hospital; TC = ACS Verified or In Process Trauma Center;

CAH = Critical Access Hospital; Hospital = does not fall into above categories

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For Linked Transfer Patients:

For Transfer Patients:				
	All Transfer Patients	Critical*	Physiological Critical**	ISS Critical***
Number of Patients	600	186	156	55
EMS Notified to Scene	8.1 minutes	7.7 minutes	7.6 minutes	7.3 minutes
EMS Scene Arrival to Departure	22.2 minutes	32.4 minutes	35.8 minutes	18.7 minutes
EMS Scene Departure to Initial Hospital ED Arrival	19.7 minutes	16.2 minutes	15.7 minutes	17.1 minutes
Initial Hospital ED Arrival to Departure	2 hours 8.9 minutes	2 hours 3 minutes	2 hours 3.7 minutes	1 hour 52.6 minutes
Initial Hospital ED Departure to Final Hospital ED Arrival	2 hours 11.3 minutes	2 hours 5.5 minutes	2 hours 7.1 minutes	1 hour 56.9 minutes
TOTAL TIME	5 hours 10.2 minutes	5 hours 4.8 minutes	5 hours 9.9 minutes	4 hours 32.6 minutes

*Critical patient is defined as having a GCS ≤ 12 , OR Shock Index > 0.9 OR ISS > 15 at the initial hospital.

**Physiological Critical Transfer patient is defined as having a Shock Index > 0.9 OR GCS ≤ 12 at the initial hospital.

***ISS Critical Transfer patient is defined as having an ISS > 15 at the initial hospital

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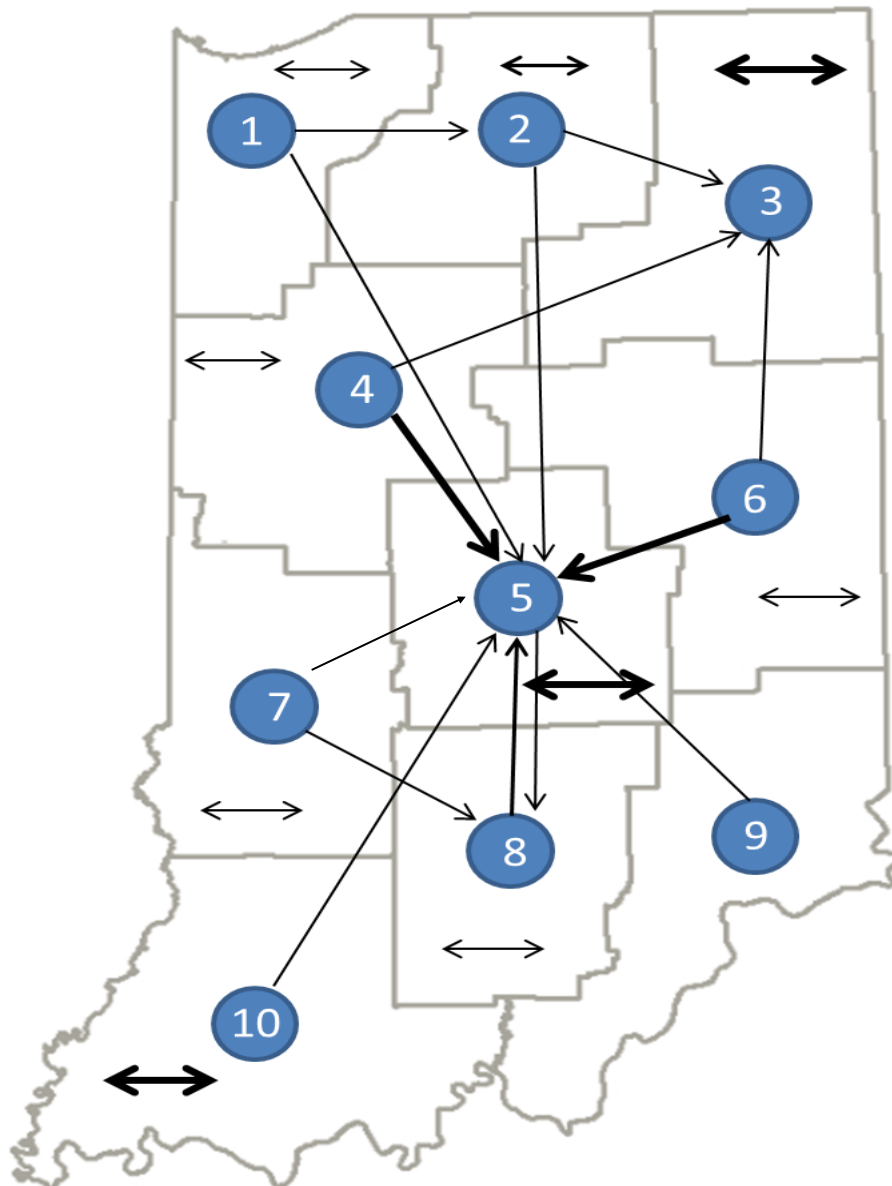
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*The thickness of the line indicates the frequency of transfers out of or within the public health preparedness district. The circles represent transfers from a specific PHPD, not of a specific hospital or county.

For Transfer Patients:

Public Health Preparedness District Initial Hospital	Public Health Preparedness District Final Hospital	Incident Counts
1	2	15
1	5	15
2	2	1
2	3	1
2	5	3
3	3	126
3	5	3
4	3	1
4	4	4
4	5	39
5	5	106
6	3	10
6	5	82
6	6	2
7	5	48
7	7	13
8	5	39
8	8	6
8	10	1
9	5	1
9	9	1
10	5	8
10	10	75

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For Transfer Patients:

	All Transfer Patients	<i>Critical*</i>	<i>Physiological Critical**</i>	<i>ISS Critical***</i>
Number of Patients	600	186	156	55
Total Time	5 hours 10.2 minutes	5 hours 4.8 minutes	5 hours 9.9 minutes	4 hours 32.6 minutes
Total Mileage	52.3	59.0	59.9	61.5
Injury Scene to Initial Hospital Mileage***	8.2	7	6.7	7.8
Initial Facility to Final Facility Mileage	44.1	51.9	53.1	53.8

Estimated Average Distance (miles) by Region (region of final hospital):

Region	Injury Scene to Initial Facility Mileage [†]	Initial Facility to Final Facility Mileage	Total Mileage	Drive Count	Air Count
Indiana Average	8.2	44.1	52.3	539	61
North Region	7.9	27	34.9	146	8
Central Region	8.1	54.4	62.5	321	42
South Region	8.8	31.3	40.1	72	11

*Critical patient is defined as having a GCS ≤ 12 , OR Shock Index > 0.9 OR ISS > 15 at the initial hospital.

**Physiological Critical Transfer patient is defined as having a Shock Index > 0.9 OR GCS ≤ 12 at the initial hospital.

*** ISS Critical Transfer patient is defined as ISS > 15 at the initial hospital.

[†]Injury Scene to Initial Facility Mileage location estimated by zip code centroid

Statistics for Estimated Average Distance by Region calculated by Public Health Geographics, Epidemiology Resource Center, ISDH

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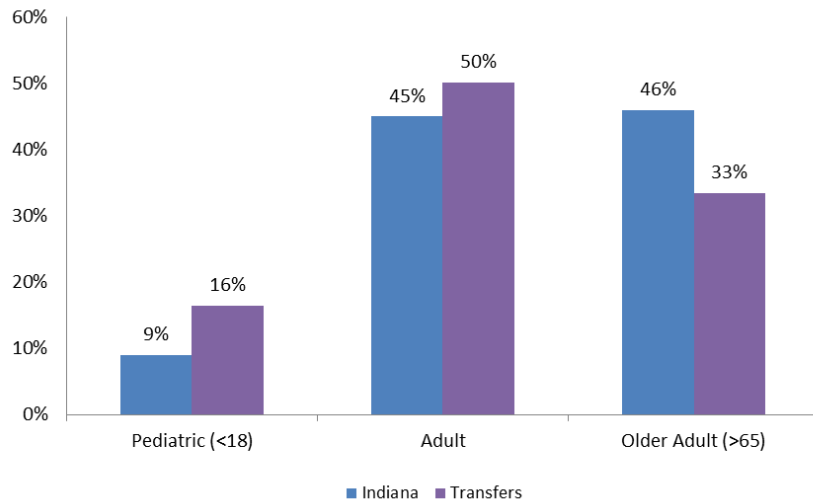
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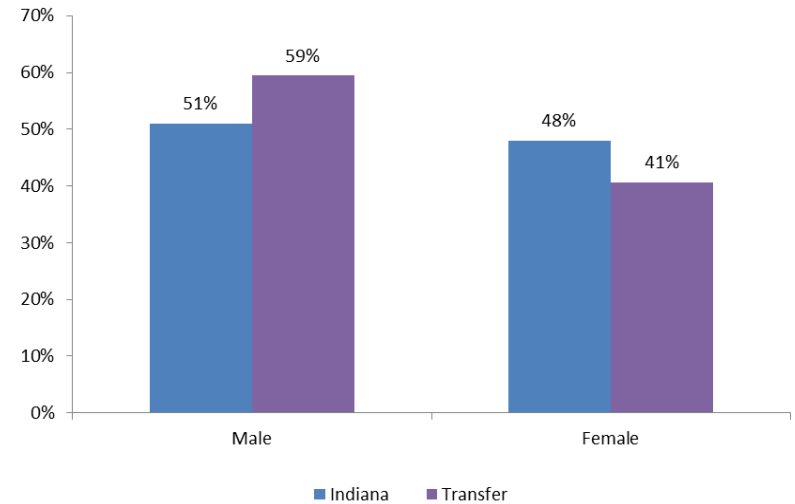
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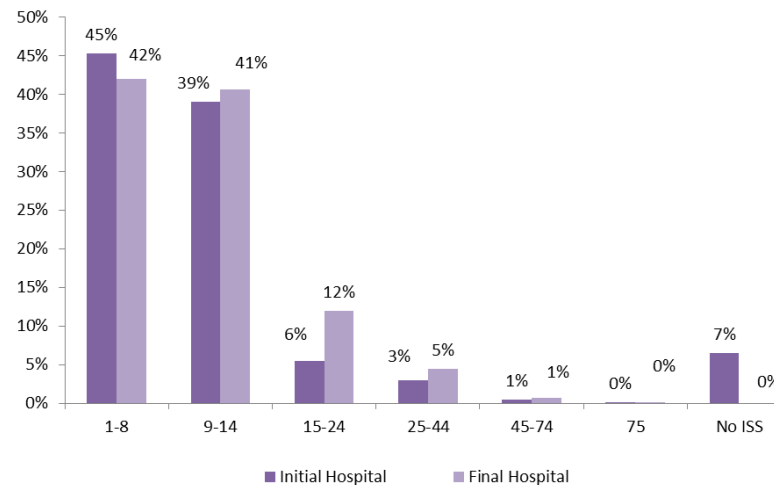
Patient Age Groupings



Patient Gender



Injury Severity Score (ISS)



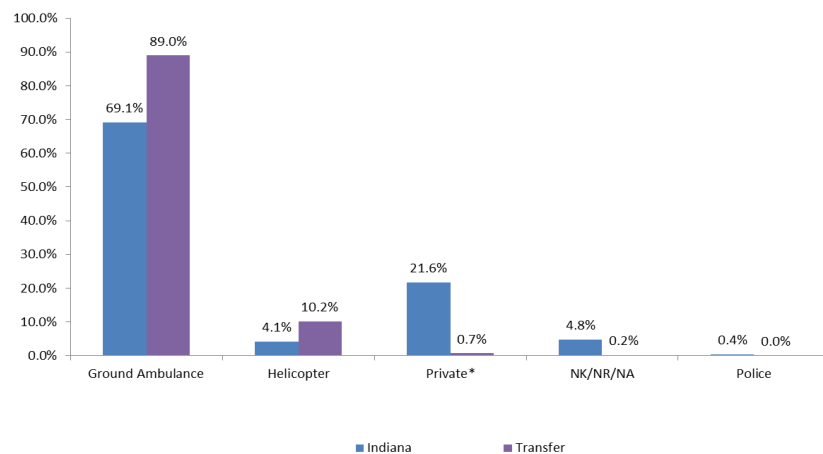
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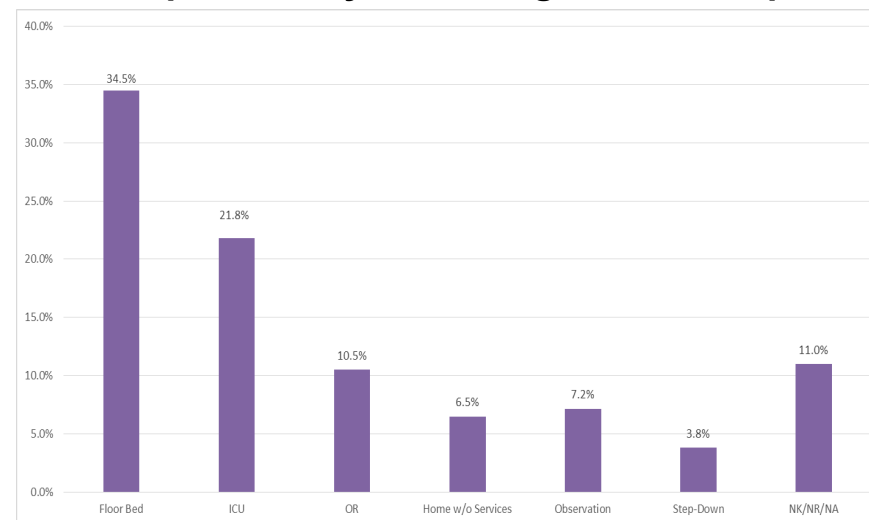
Transport Mode— Final Hospital



<1% Transport Mode: Police, Other

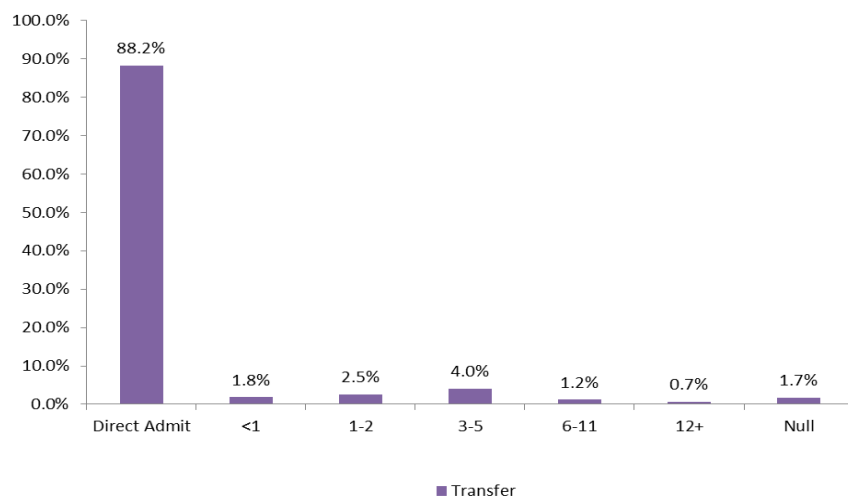
* Indicates Private/ Public Vehicle, Walk-in

ED Disposition by Percentage- Final Hospital

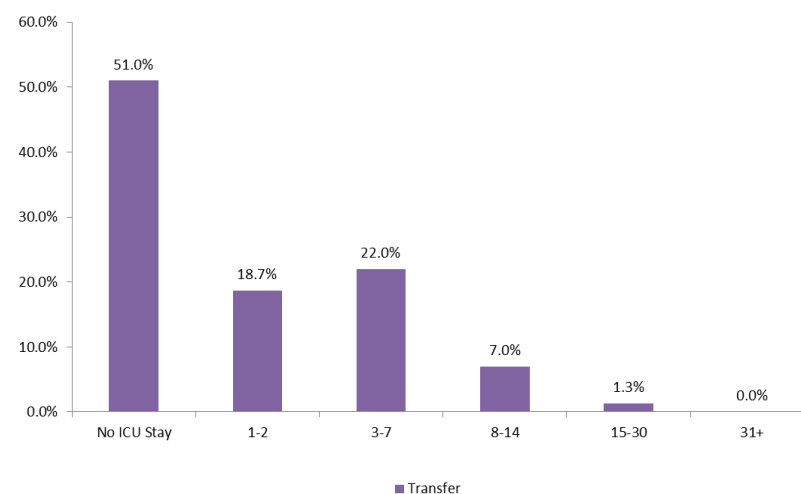


<1% : Transferred, Expired, AMA, Other

ED Length of Stay (hours)- Final Hospital



ICU Length of Stay (days)- Final Hospital



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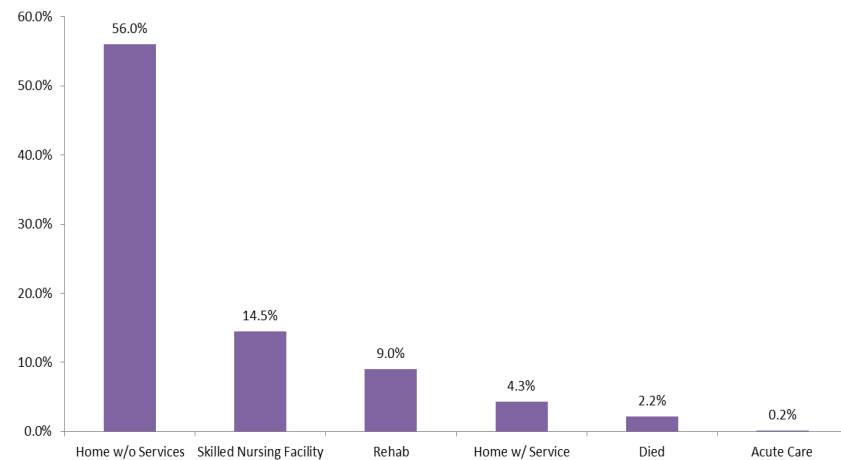
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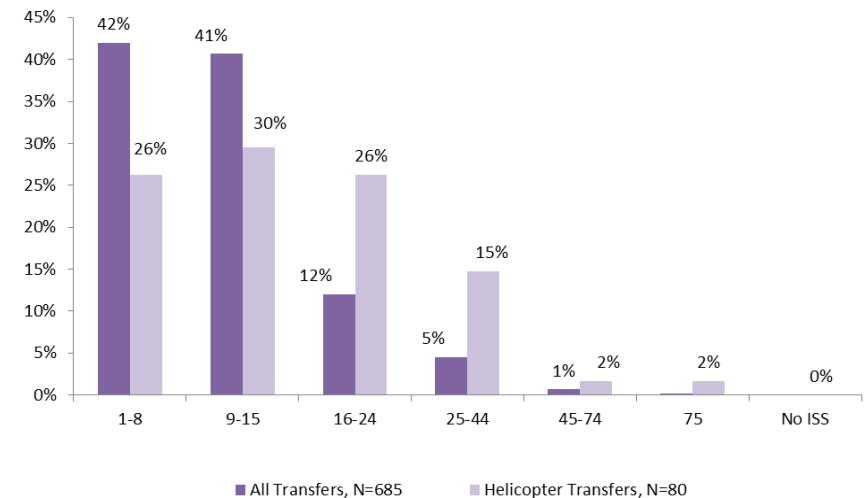
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Discharge Disposition— Final Hospital

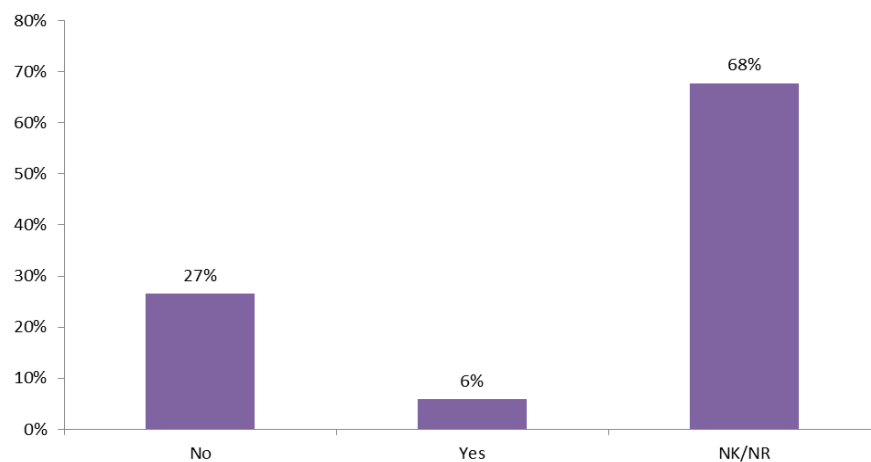


<1%: Acute care, AMA, another inst. Correctional, long-term care, hospice, psych hospital, no hospital stay

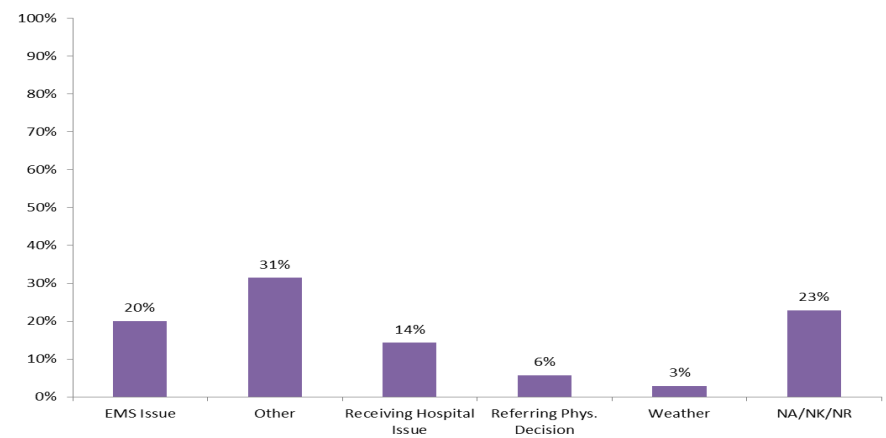
Helicopter Transfers by ISS— Final Hospital



Transfer Delay Indicated- Initial Hospital



Initial Facility Transfer Delay Reason



<1%: Receiving hospital radiology, missing

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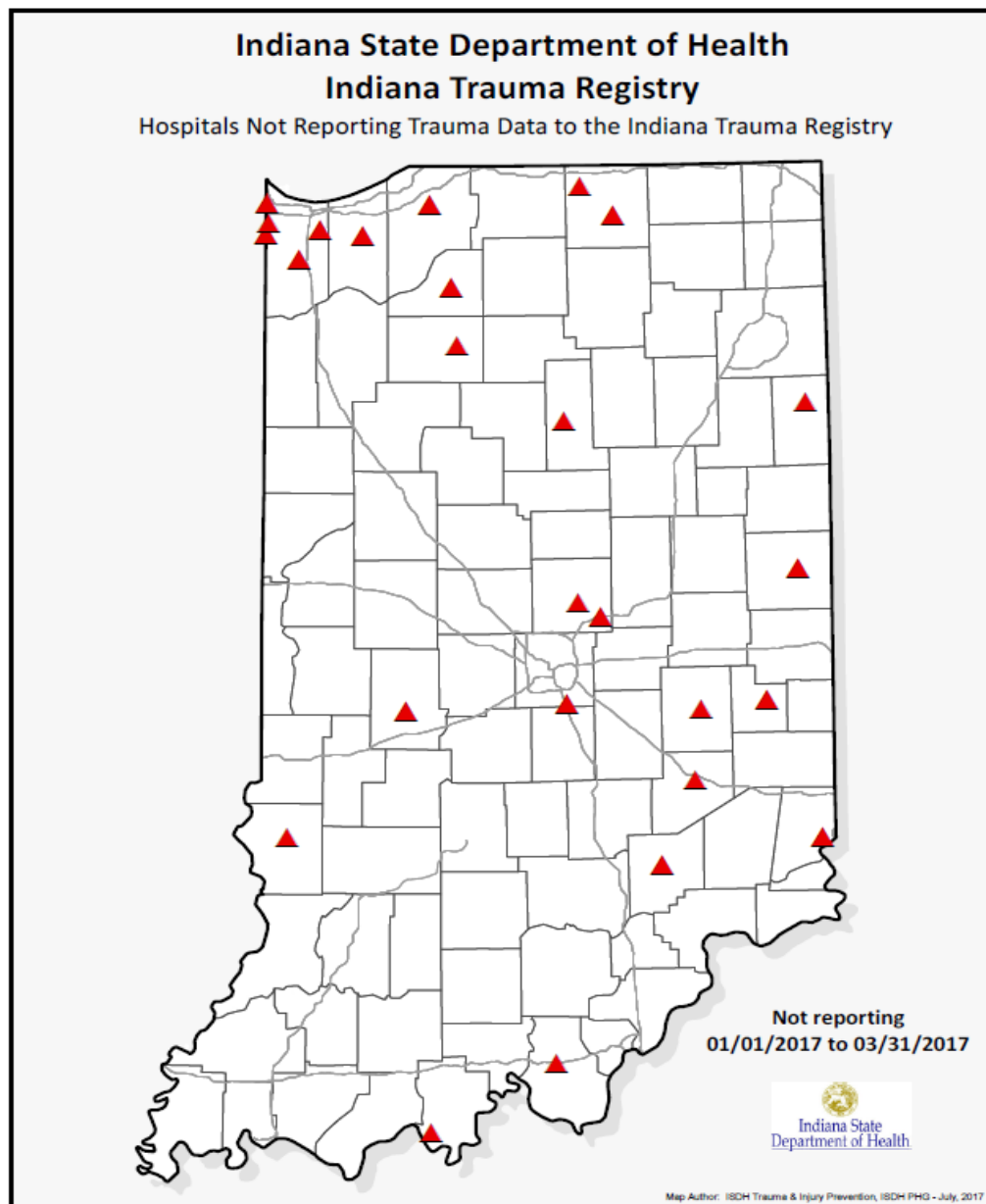
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Hospital that did not report during Q1 2017:

- Adams Memorial Hospital
- Dearborn County
- Decatur County Memorial
- Dukes Memorial
- Elkhart General
- Fayette Regional Health
- Franciscan Health Crown Point
- Franciscan Health Dyer
- Franciscan Health Hammond
- Franciscan Health Indianapolis
- Franciscan Health Munster
- Harrison County
- IU Health Goshen
- IU Health LaPorte
- IU Health Starke
- Perry County Memorial
- Pulaski Memorial
- Riverview Health
- Rush Memorial
- St. Mary Medical Center—Hobart
- St Vincent. Fishers
- St. Vincent Jennings
- St. Vincent Randolph
- Sullivan County Community
- Valparaiso Medical Center



Indiana State Department of Health Indiana Trauma Registry

Hospitals Reporting Trauma Data Quarter 1
January 1, 2017 - March 31, 2017

I II Level I and II Trauma Centers

Deaconess Hospital
Eskenazi Health
IU Health - Methodist Hospital
Lutheran Hospital of Indiana
Memorial Hospital of South Bend
Parkview Regional Medical Center
Riley Hospital for Children at IU Health
St Mary's Medical Center of Evansville
St Vincent Indianapolis Hospital & Health Services
Terre Haute Regional Hospital

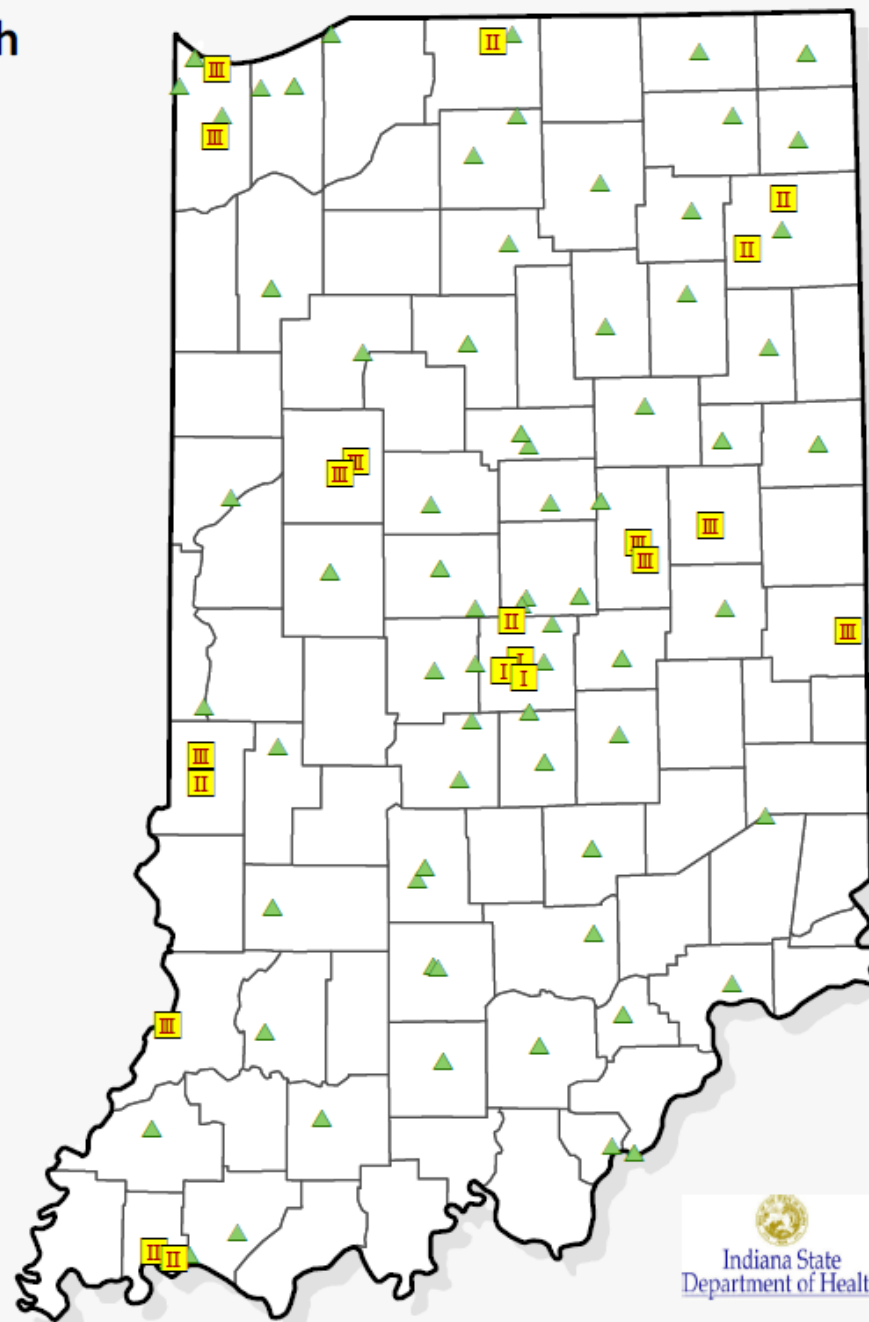
III Level III Trauma Centers

Community Hospital of Anderson & Madison Co.
Franciscan St Anthony Health - Crown Point
Franciscan St Elizabeth Health - Lafayette East
Good Samaritan Hospital
IU Health - Arnett Hospital
IU Health - Ball Memorial Hospital
Methodist Hospitals - Northlake Campus
Reid Hospital & Health Care Services
St Vincent Anderson
Union Hospital Terre Haute

▲ Non-Trauma Hospitals

75 Non-Trauma Hospitals

Hospital categories include Verified and "In the Process"
Trauma Centers as of March 31, 2017.



Map Author: ISDH Trauma & Injury Prevention, ISDH PHG - March 31, 2017

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Requests and Changes to the Report from Trauma Care Committee members at the February 2017 ISTCC meeting:

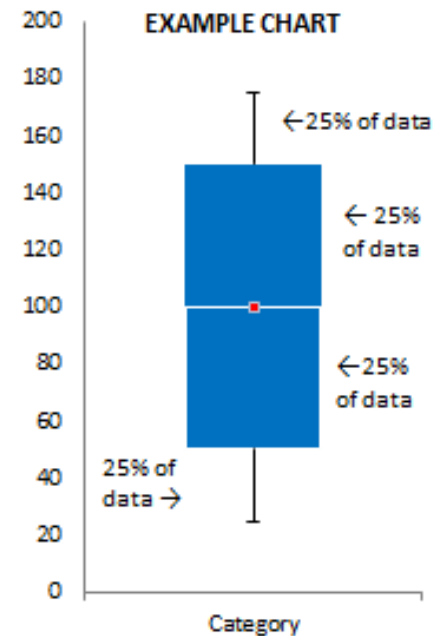
General Report:

- ED LOS is calculated using ED Acute Care Admission Date/Time and ED Acute Care Discharge Date/Time (Orders Written)
- Hospital LOS is calculated using Hospital Admission Date/Time and Hospital Discharge Date/Time (Orders Written)
- Trauma type and probability of survival will not be included in the statewide report until the CDC finalizes their guidelines on how to categorize those variables.
- Pages 45-51 have caterpillar plots with the ED LOS for critical transfer patients.
- Signs of Life: The two field values for this variable are: 1) Arrived with no signs of life, 2) Arrived with signs of life. A patient with no signs of life is defined as having none of the following: organized EKG activity, pupillary responses, spontaneous respiratory attempts or movement, and unassisted blood pressure. This usually implies the patient was brought to the ED with CPR in progress.

Example Bar and Whisker Plot:

-Bar and whisker plots were requested at the November 2013 ISTCC meeting in order to show more than just an average ED LOS and ED LOS by ISS. The bar and whisker plots represent the four quartiles of data, as illustrated on the example graph to the right. The blue boxes each contain 25% of the values and the error bars each represent where 25% of the values fell. The median is represented in the middle of the two blue boxes with the white line. The red dot in the center indicates the average for that category. The cap on the error bars indicates the minimum and maximum of each category and all the values fall within the two caps.

-For the ED LOS bar and whisker plots to the right, the average is represented by the white dot and the color boxes reflect the hospital type. The ED LOS by ISS plots on the next page follow the same layout and the red dots indicate the average for each of the ISS categories.



Indiana Trauma Registry

Statewide Quarter 1 Data Report

January 1, 2017—March 31, 2017

7,805 Incidents

92 Total Hospitals Reporting

Level I and II:	10 facilities	49.6% of data
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(Non-Trauma) Hospitals:	72 facilities	33.9% of data

Supplemental Report

The Supplemental Report (pages 19-55) contains demographic information, data that stays nearly constant from quarter to quarter, and reference tables and maps.

Definitions:

Emergency Department Length of Stay (ED LOS): The time from ED Admission to ED Discharge (Physical Exit). This changed to time from ED Admission to ED Discharge (Orders Written) beginning with Quarter 3 2016 data (July 1, 2016—September 30, 2016). There is a 120 minute performance improvement filter that is tracked for various hospital groups.

Direct Admit: Patient is admitted directly to the hospital and does not spend time in Emergency Department. The ED Length of Stay should reflect a direct admittance.

External Cause of Injury: ICD-10-CM codes that are used to describe the mechanism or external factor that caused the injury event.

Trauma Type: The classification of the force applied to the body. Trauma type categories include blunt, penetrating, thermal, and other trauma.

Injury Severity Score: An anatomical scoring system defined as the sum of the three highest squared maximum Abbreviated Injury Scale (AIS) values to account for multiple injuries in the six body regions.

Signs of Life: The two field values for this variable are: 1) Arrived with no signs of life, 2) Arrived with signs of life. A patient with no signs of life is defined as having none of the following: organized EKG activity, pupillary responses, spontaneous respiratory attempts or movement, and unassisted blood pressure. This usually implies the patient was brought to the ED with CPR in progress.

Acronyms:

E-code: External Cause of Injury	MVC: Motor Vehicle Collision
ED: Emergency Department	OR: Operating Room
ICU: Intensive Care Unit	Ps: Probability of Survival
ISS: Injury Severity Score	CAHs: Critical Access Hospital
LOS: Length of Stay	

Calculations:

$Ps = 1/(1+e^{-b})$ where $b=b_0+b1(RTS) + b2(ISS) + b3(Age\ Index)$

Total GCS = Verbal GCS + Motor GCS + Eye GCS

$RTS = 0.94*GCS + 0.73*SBP + 0.29*RR$

$ISS = (AIS)^2 + (AIS)^2 + (AIS)^2$



Indiana State
Department of Health
Trauma and Injury Prevention

Indiana Trauma Registry

Statewide Quarter 1 Data Report

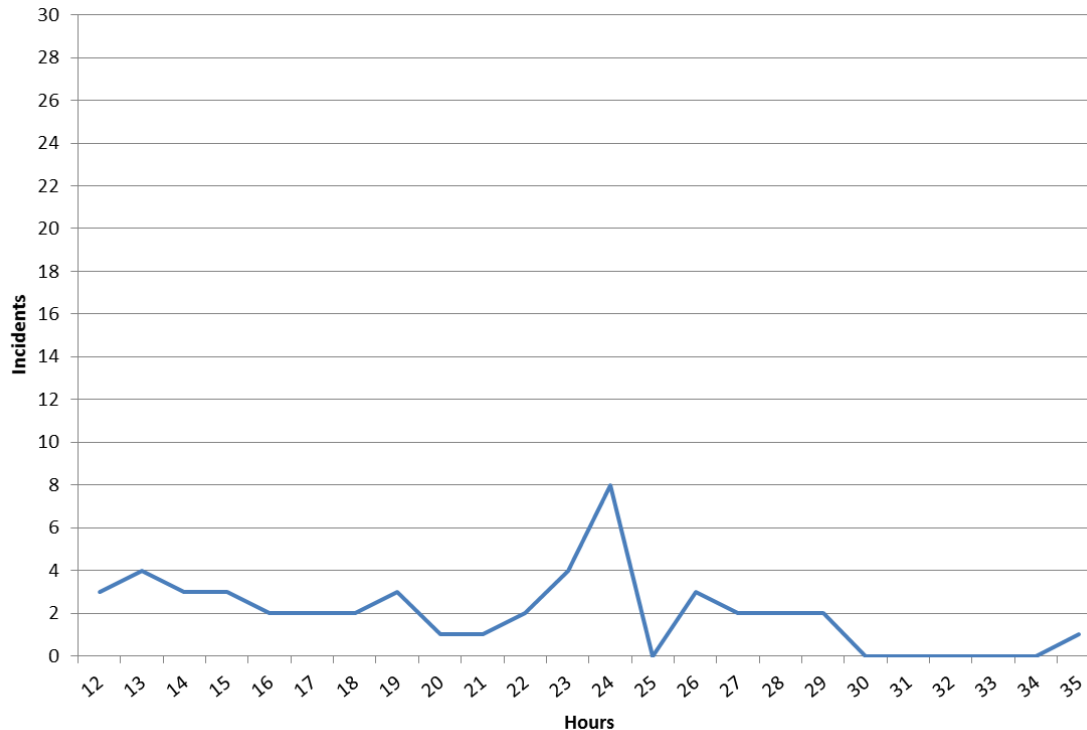
January 1, 2017—March 31, 2017

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ED LOS ≥ 12 Hours



N=48

ED Length of Stay ≥ 12 Hours

Hour	Count	Hour	Count
12th	3	24th	8
13th	4	25th	0
14th	3	26th	3
15th	3	27th	2
16th	2	28th	2
17th	2	29th	2
18th	2	30th	0
19th	3	31st	0
20th	1	32nd	0
21st	1	33rd	0
22nd	2	34th	0
23rd	4	35th	1

Indiana Trauma Registry

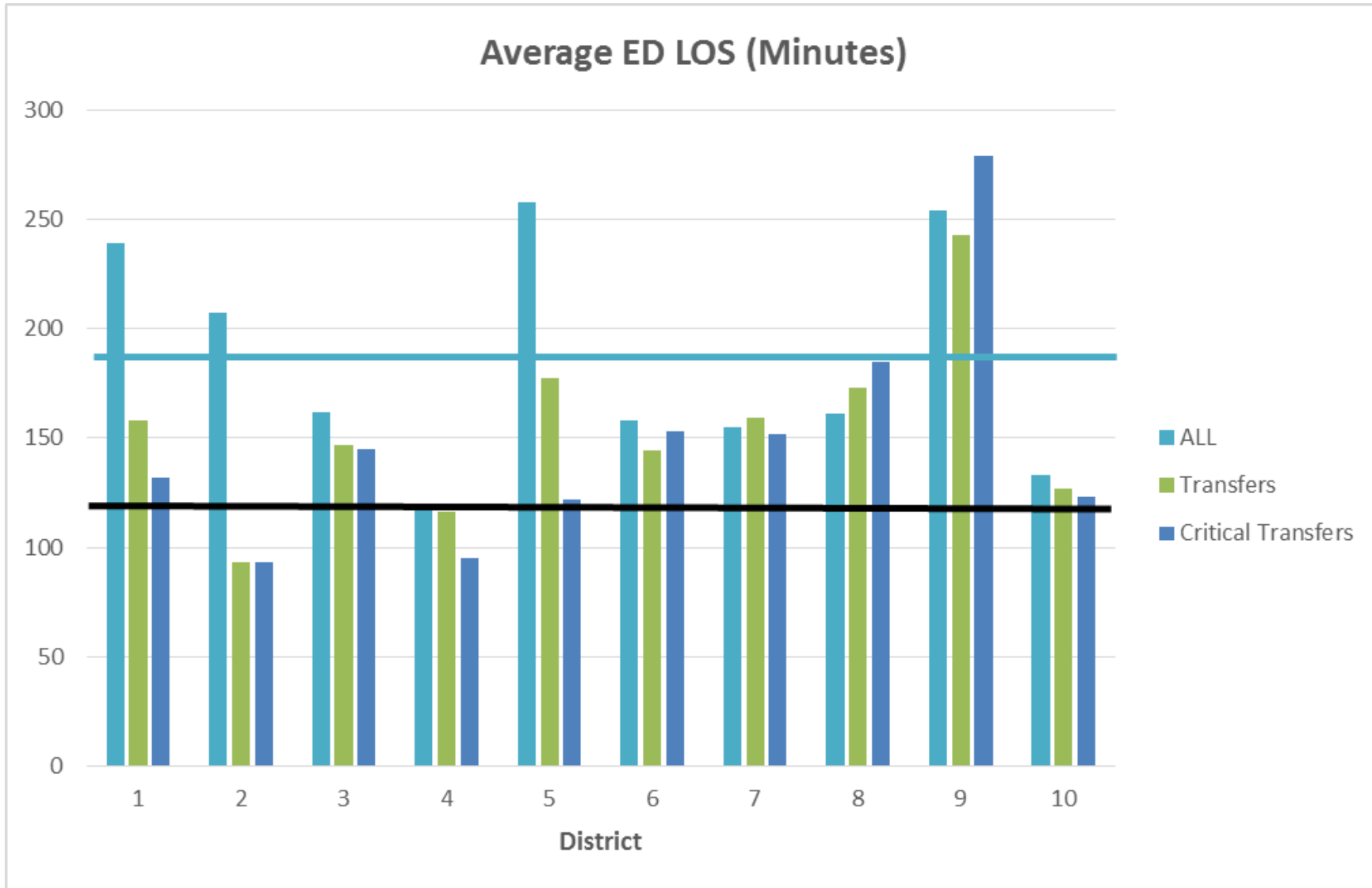
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*Black line represents the 120 minute performance improvement filter

**Blue line represents the state average

Indiana Trauma Registry

Statewide Quarter 1 Data Report

January 1, 2017—March 31, 2017

7,805 Incidents

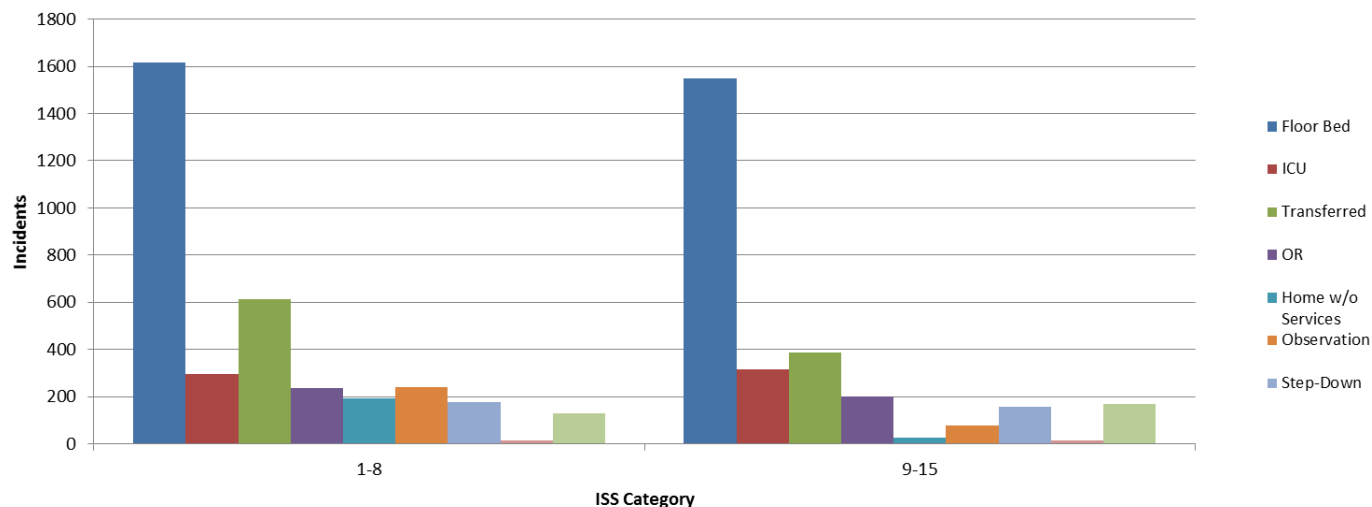
92 Total Hospitals Reporting

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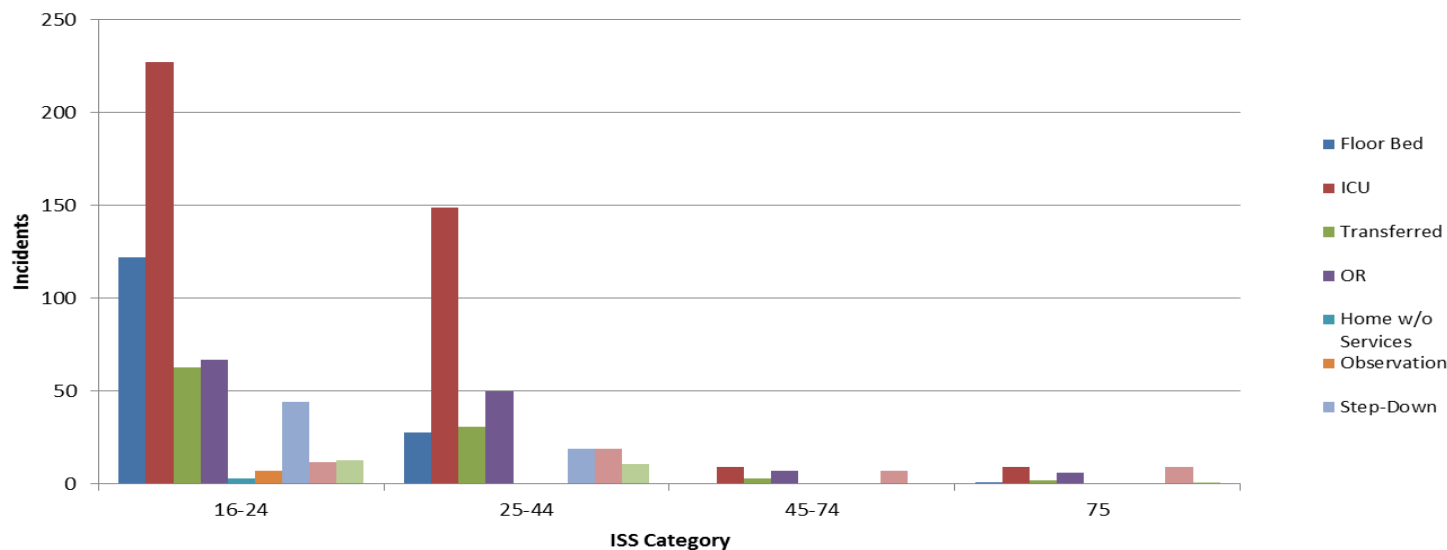
Level III: 10 facilities 16.5% of data

(Non-Trauma) Hospitals: 72 facilities 33.9% of data

ED Disposition by ISS 1-15



ED Disposition by ISS 16-75



ED Disposition <1%: Expired, AMA; Home with services; Other (Jail, Mental Institution, etc.). Please note the difference in axis scale between the top and bottom graphs.

*A table with values for ED Disposition by ISS is found on page 54.

Indiana Trauma Registry

Statewide Quarter 1 Data Report

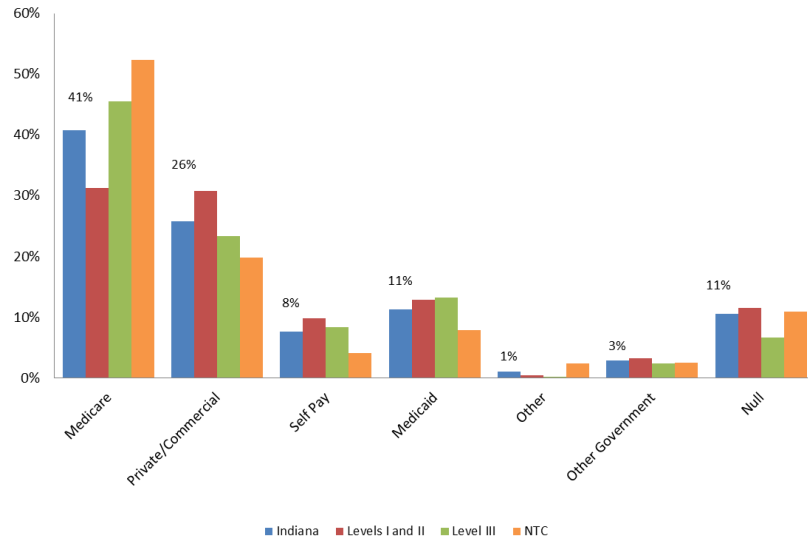
January 1, 2017—March 31, 2017

7,805 Incidents

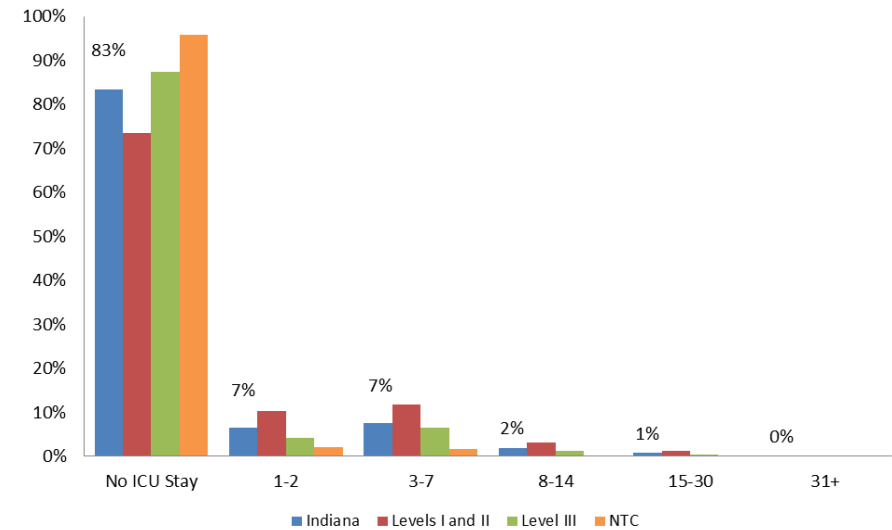
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Primary Payer Mix



ICU Length of Stay (Days)



Indiana Trauma Registry

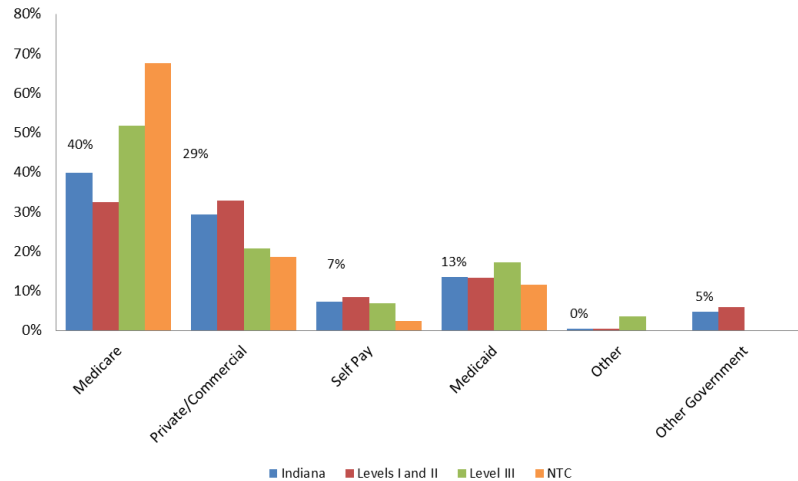
Statewide Quarter 1 Data Report January 1, 2017—March 31, 2017 7,805 Incidents

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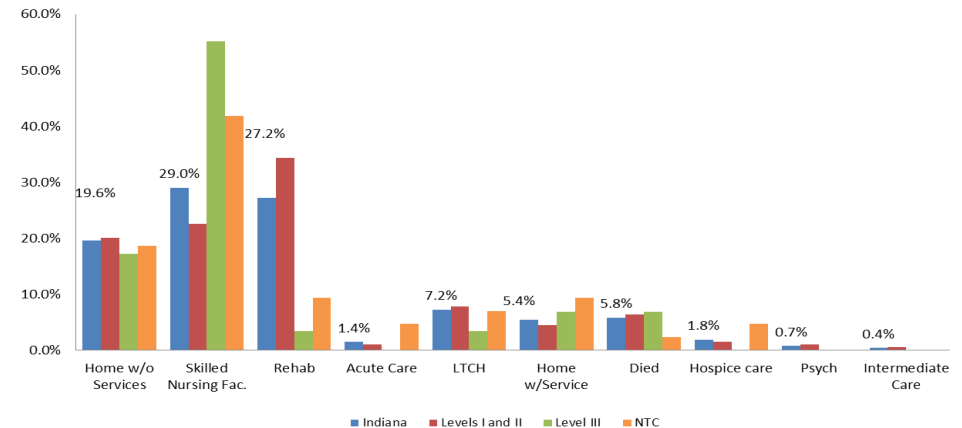
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Hospital Length of Stay > 15 days, N=276

Primary Payer Mix

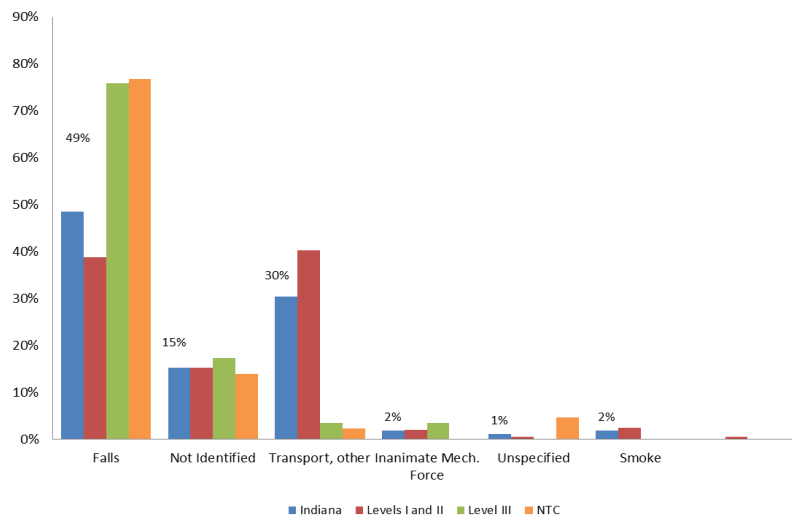


Hospital Disposition



Another Institution includes any other medical facility not defined in the other categories.

Cause of Injury



Cause of Injury is based on ICD-10-CM codes as of January 1, 2016. The categories for this variable include:

- Transport
- Falls
- Inanimate Mechanical Forces
- Animate Mechanical Forces
- Drowning
- Breathing
- Electricity/Radiation
- Smoke
- Heat
- Venom
- Forces of Nature
- Overexertion and Travel
- Unspecified
- Poisoning
- Not Identified

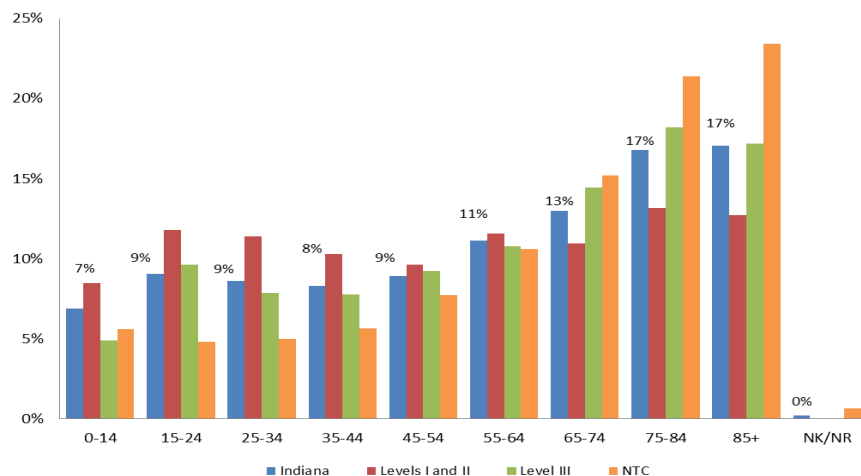
Indiana Trauma Registry

Statewide Quarter 1 Data Report January 1, 2017—March 31, 2017 7,805 Incidents

92 Total Hospitals Reporting

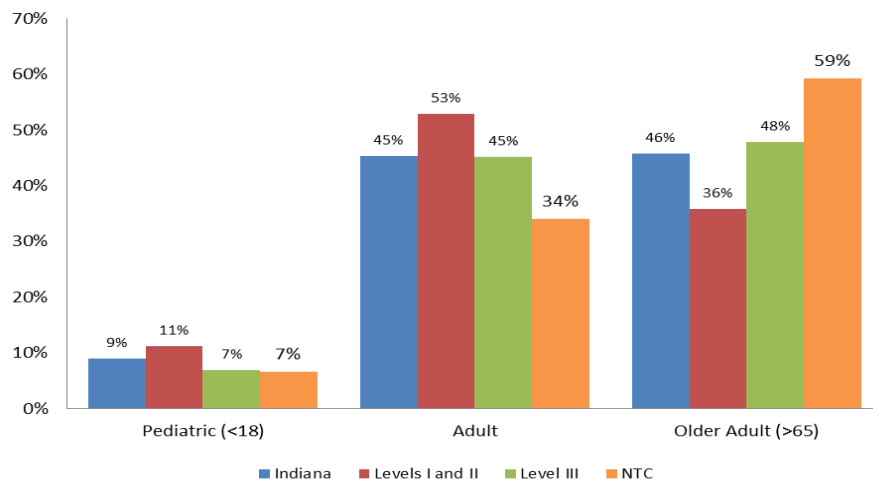
Level I and II:	10 facilities	49.6% of data
Level III:	10 facilities	16.5% of data
(Non-Trauma) Hospitals:	72 facilities	33.9% of data

Patient Age (Years)



There were 18 unknown ages.

Patient Age Groupings



Age Group	Indiana	Level I and II	Level III	NTC
0-14	539	328	63	148
15-24	708	457	124	127
25-34	674	441	101	132
35-44	647	398	100	149
45-54	696	373	119	204
55-64	868	448	139	281
65-74	1013	425	186	402
75-84	1310	510	234	566
85+	1332	492	221	619
NK/NR	18	1	0	17
Total	7805	3873	1287	2645

Age Group	Indiana	Level I and II	Level III	NTC
Pediatric (<18)	696	433	89	174
Adult	3528	2051	582	895
Older Adult (>65)	3563	1388	616	1559
Total	7787	3872	1287	2628

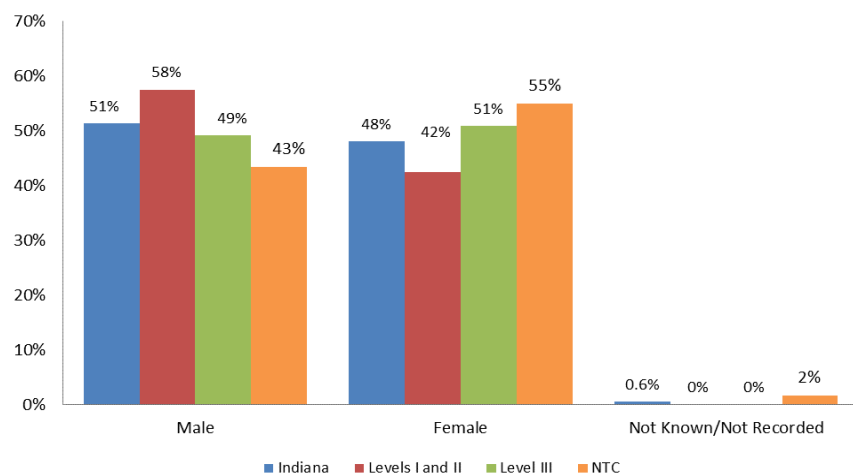
Indiana Trauma Registry

Statewide Quarter 1 Data Report January 1, 2017—March 31, 2017 7,805 Incidents

92 Total Hospitals Reporting

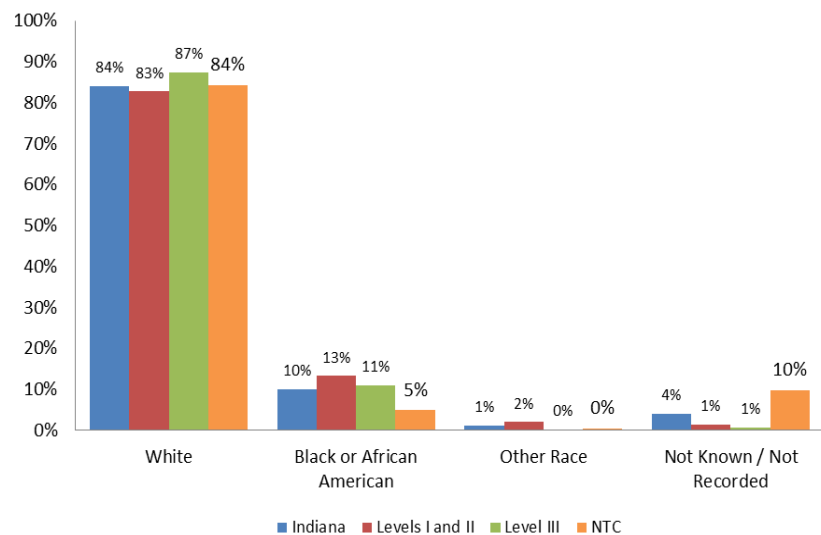
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Patient Gender



Gender	Indiana	Level I and II	Level III	NTC
Male	4006	2227	632	1147
Female	3755	1646	655	1454
Unknown	44	0	0	44
Total	7805	3873	1287	2645

Patient Race



Race	Indiana	Level I and II	Level III	NTC
White	6557	3203	1124	2230
Black or African American	785	514	142	129
Other	91	77	2	12
Not Known/Not Recorded	320	52	10	258
American Indian or Alaska Native	10	6	3	1
Asian	36	18	5	13
Native Hawaiian or Pacific Islander	6	3	1	2
Total	7805	3873	1287	2645

<1% Race - Asian, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native

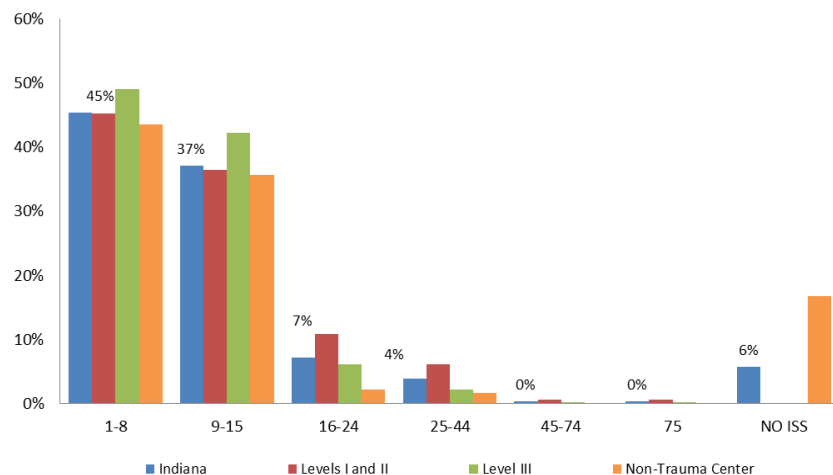
Indiana Trauma Registry

Statewide Quarter 1 Data Report January 1, 2017—March 31, 2017 7,805 Incidents

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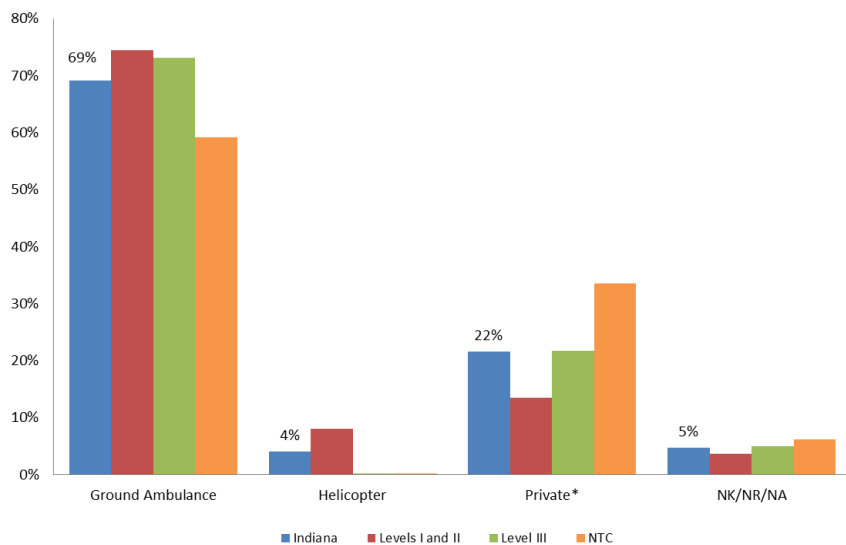
Injury Severity Score (ISS)



ISS Category	Indiana	Level I and II	Level III	NTC
1-8	3539	1755	632	1152
9-15	2898	1411	543	944
16-24	558	422	79	57
25-44	307	236	28	43
45-74	26	22	2	2
75	28	24	2	2
No ISS	449	3	1	445
Total	7805	3873	1287	2645

There were 26 and 28 cases in the 45-74 and 75+ categories, respectively

Transport Mode



Transport Mode	Indiana	Level I and II	Level III	NTC
Ground Ambulance	5393	2885	941	1567
Helicopter	320	313	3	4
Private	1689	522	279	888
NK/NR/NA	371	143	64	164
Police	31	9	0	22
Other	1	1	0	0
Total	7805	3873	1287	2645

<1% Transport Mode: Police, Other

* Indicates Private/ Public Vehicle, Walk-in

Indiana Trauma Registry

Statewide Quarter 1 Data Report

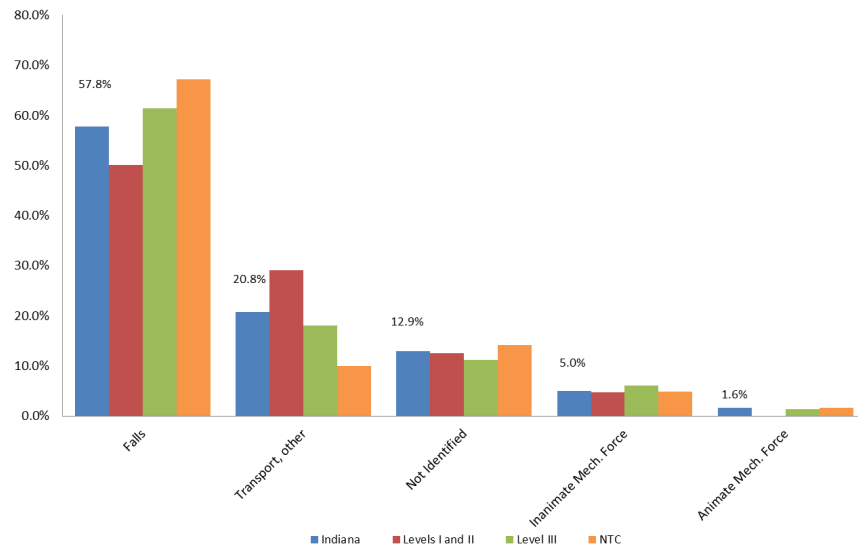
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Cause of Injury



<1% Cause of Injury Categories: Smoke, Heat, Unspecified, Electricity/Radiation, Forces of Nature, Drowning, Breathing, Venom, Noxious Substances, Overexertion and Travel, and Poisoning

Cause of Injury	Indiana	Level I and II	Level III	NTC
Falls	4511	1942	791	1778
Not Identified	1005	488	144	373
Transport	1622	1125	233	264
Inanimate Mech. Force	391	184	79	128
Animate Mech. Force	125	65	17	43
Smoke	63	37	12	14
Heat	33	12	9	12
Unspecified	31	3	0	28
Electric/Radiation	2	0	2	0
Nature	8	8	0	0
Overexertion	14	9	0	5
Total	7805	3873	1287	2645

Indiana Trauma Registry

Statewide Quarter 1 Data Report

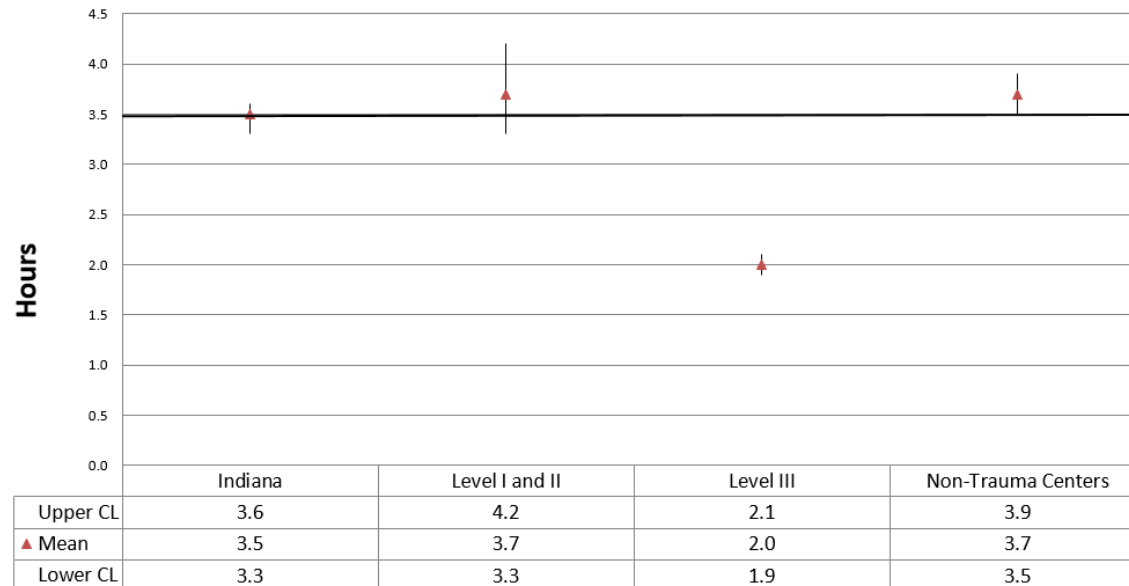
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All Patients Average ED LOS (Hours)



The purpose of the caterpillar graphs is to compare different groups to the average ED LOS. The Indiana mean is the comparison group, which is represented by the black line.

The ED LOS for these graphs was modeled using time-to-event analysis. The purposes of using this analysis were to account for censoring (death) and to see how variables influence ED LOS. The outcome variable was ED LOS and the independent variables were total GCS and age. If total GCS was missing but manual total GCS was recorded, then the manual total GCS was used. These two variables were used because they were the most similar to variables used in the published, peer-reviewed literature on ED LOS. Both were significant in the model. Increasing total GCS and age led to a slightly shorter ED LOS. Hospitals that did not have enough incidents with total GCS or age could not be modeled.

In the chart on the left, note the trauma center average is above the mean and the non-trauma center is below the mean. The mean, 95% confidence limit and lower confidence limit are listed for each group.

In the chart on the right, the data is for the trauma centers. The trauma center average is in the first column on the left side. The information for each trauma center has been assigned a random number for confidentiality. The mean, 95% confidence limit and lower confidence limit are listed for each group.

Indiana Trauma Registry

Statewide Quarter 1 Data Report

January 1, 2017—March 31, 2017

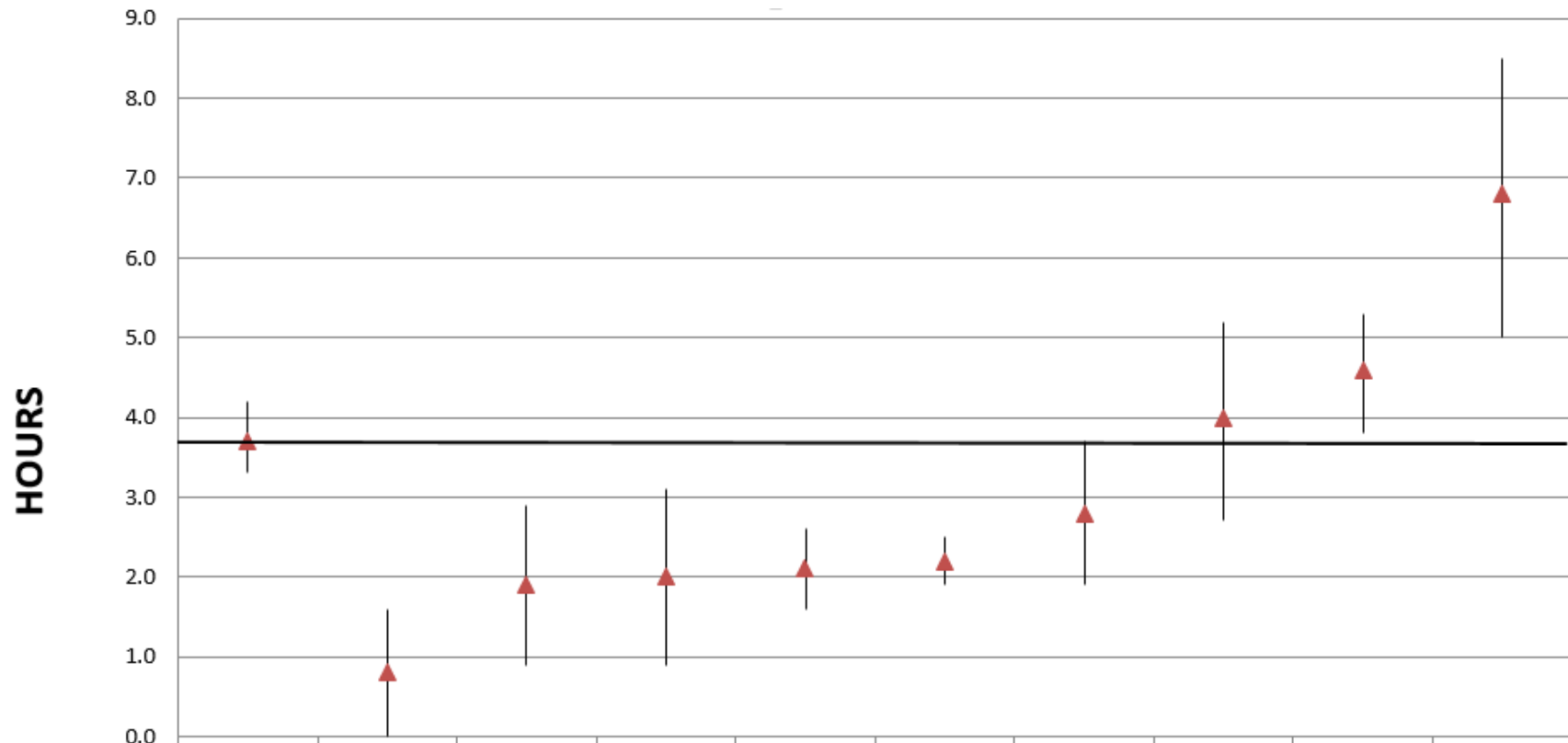
7,805 Incidents

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All Patients

Level I and II Trauma Centers ED LOS (Hours)



	Levels I and II	ID 15	ID 87	ID 95	ID 40	ID 16	ID 13	ID 82	ID 58	ID 22
Upper CL	4.2	1.6	2.9	3.1	2.6	2.5	3.7	5.2	5.3	8.5
▲ Mean	3.7	0.8	1.9	2.0	2.1	2.2	2.8	4.0	4.6	6.8
Lower CL	3.3	0.0	0.9	0.9	1.6	1.9	1.9	2.7	3.8	5.0

Indiana Trauma Registry

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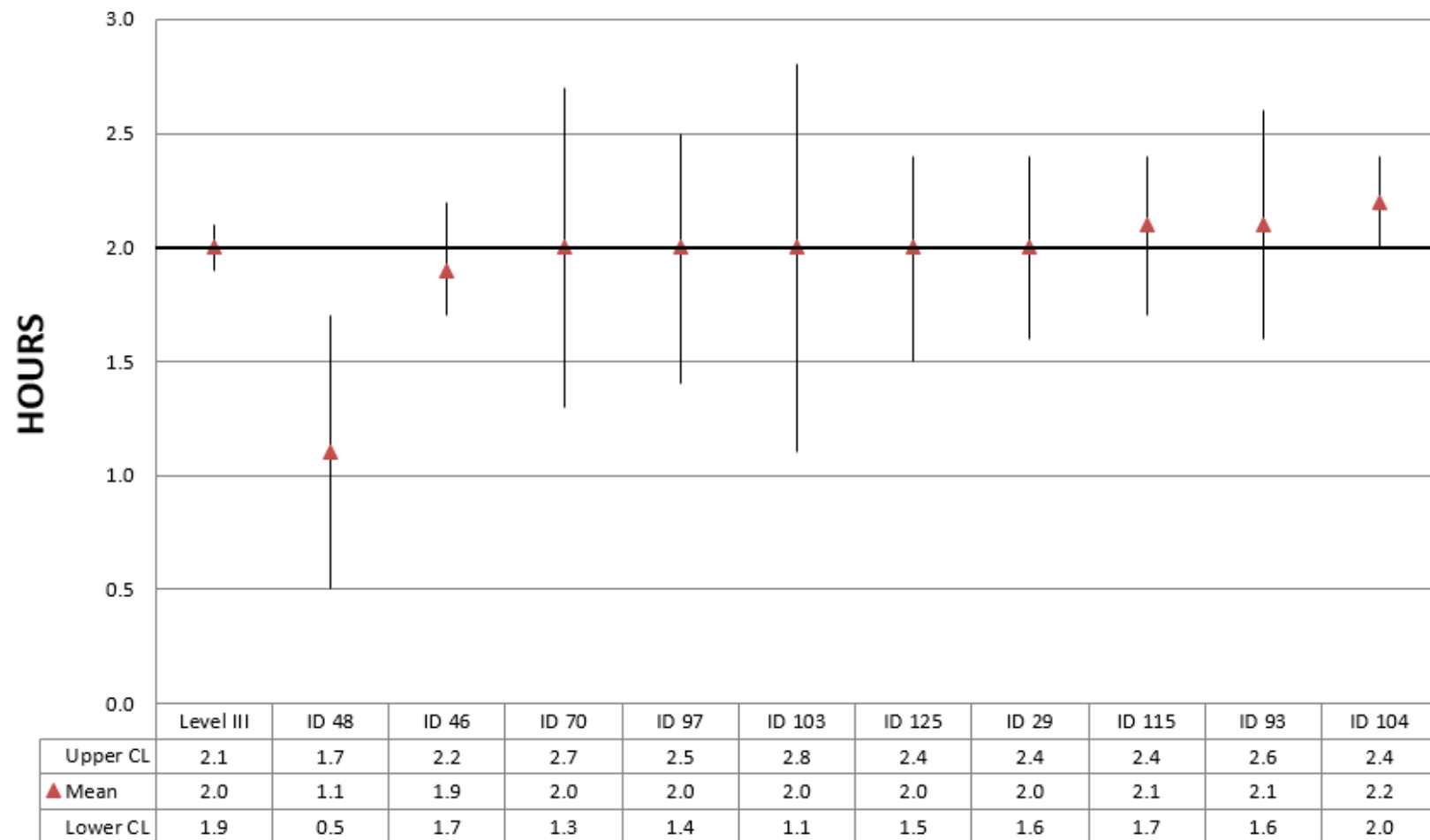
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All Patients

Level III Trauma Centers ED LOS (Hours)



Indiana Trauma Registry

Statewide Quarter 1 Data Report

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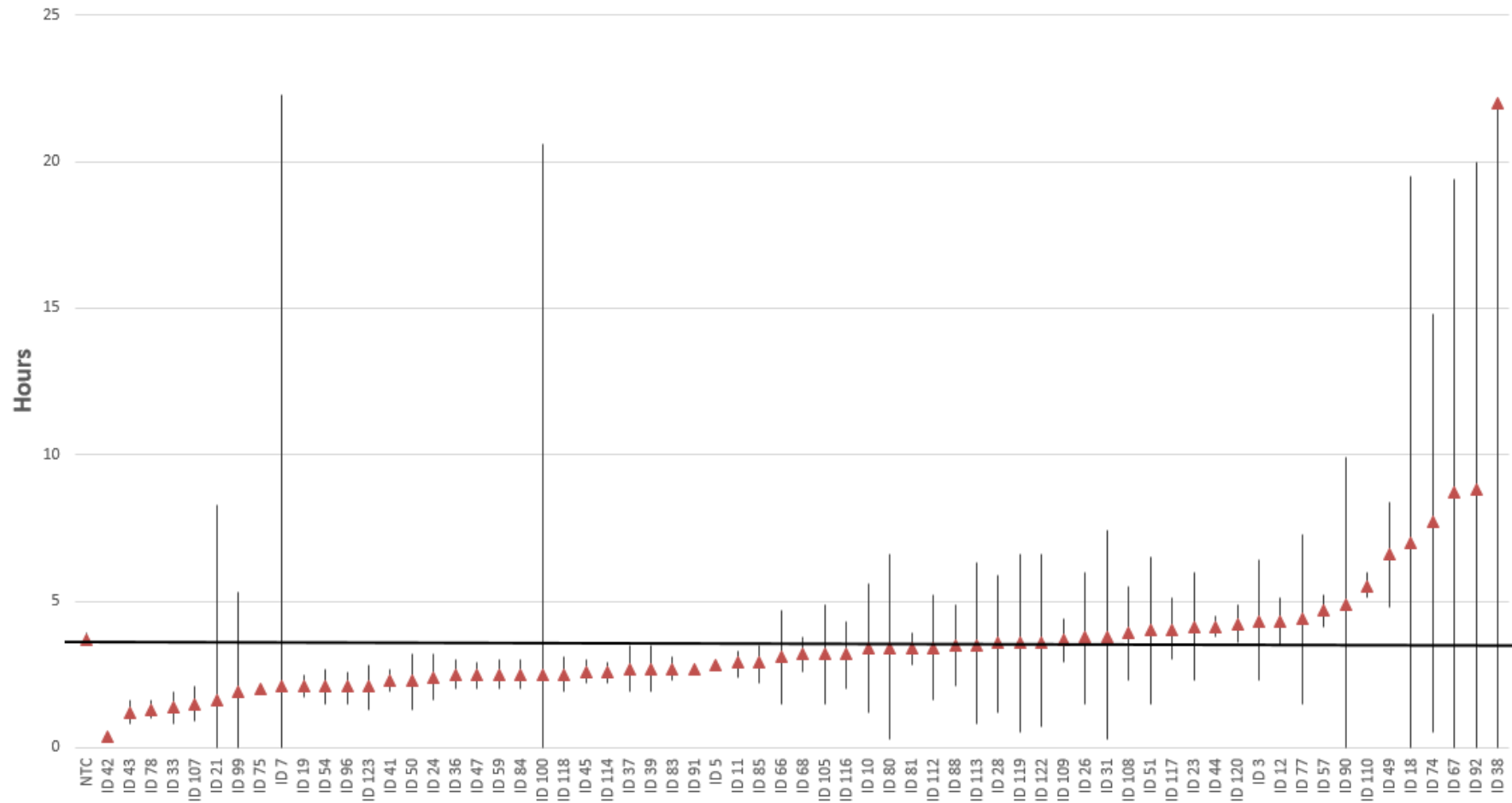
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All Patients

Non-trauma Centers ED LOS (Hours)



Indiana Trauma Registry

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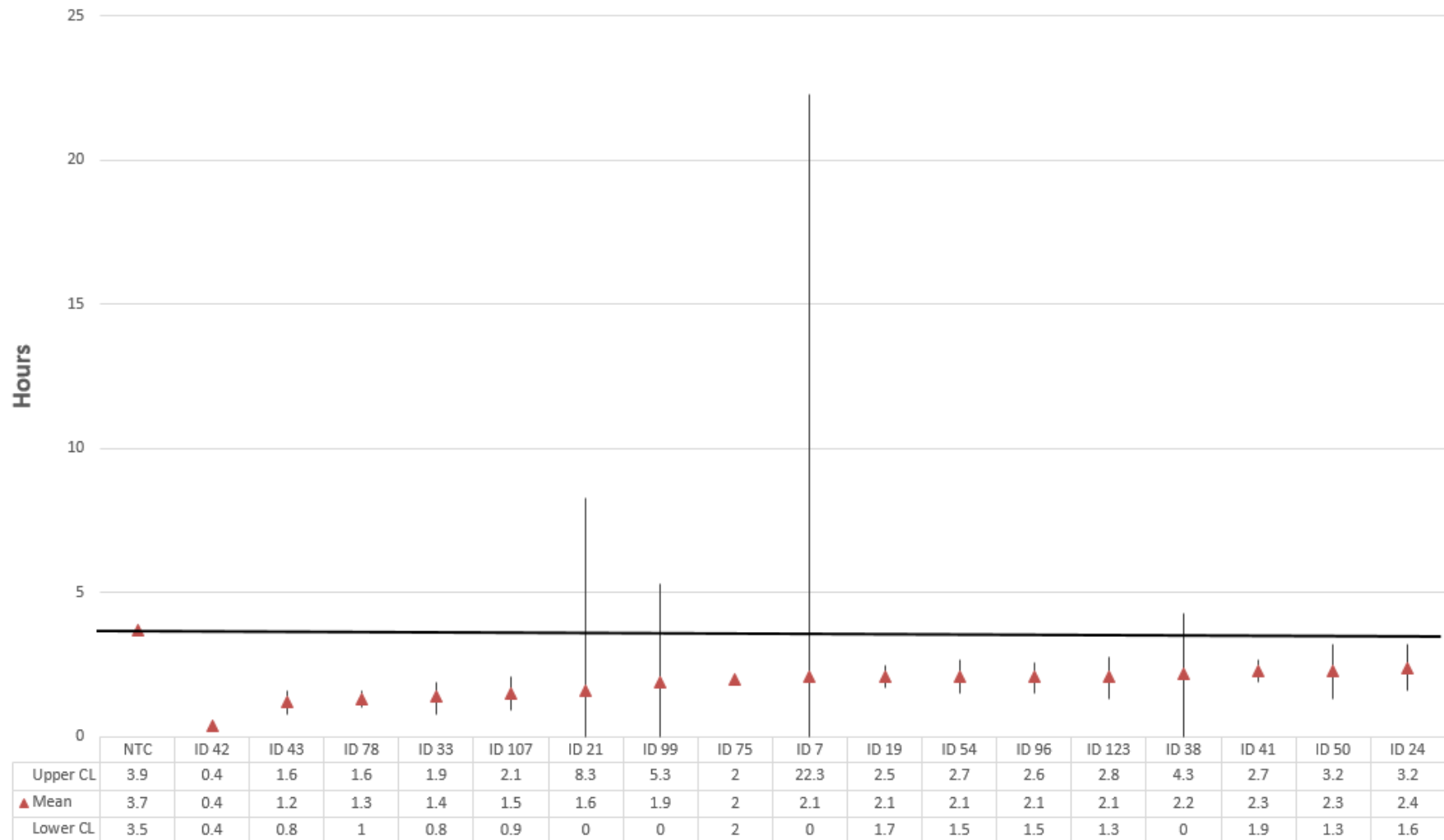
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All Patients

Non-Trauma Centers- Average ED LOS (Hours)



Indiana Trauma Registry

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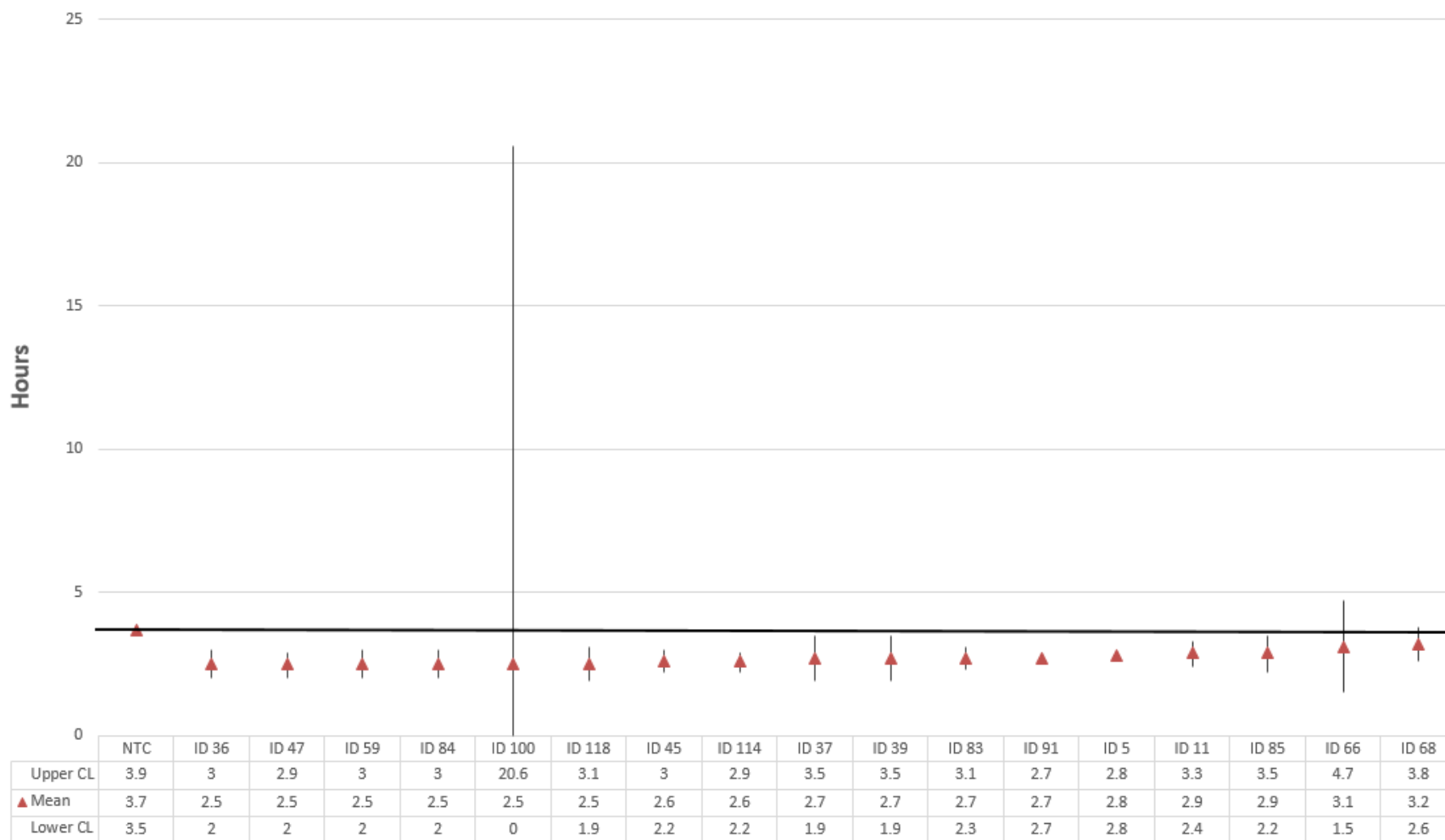
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All Patients Non-Trauma Centers- Average ED LOS (Hours)



Indiana Trauma Registry

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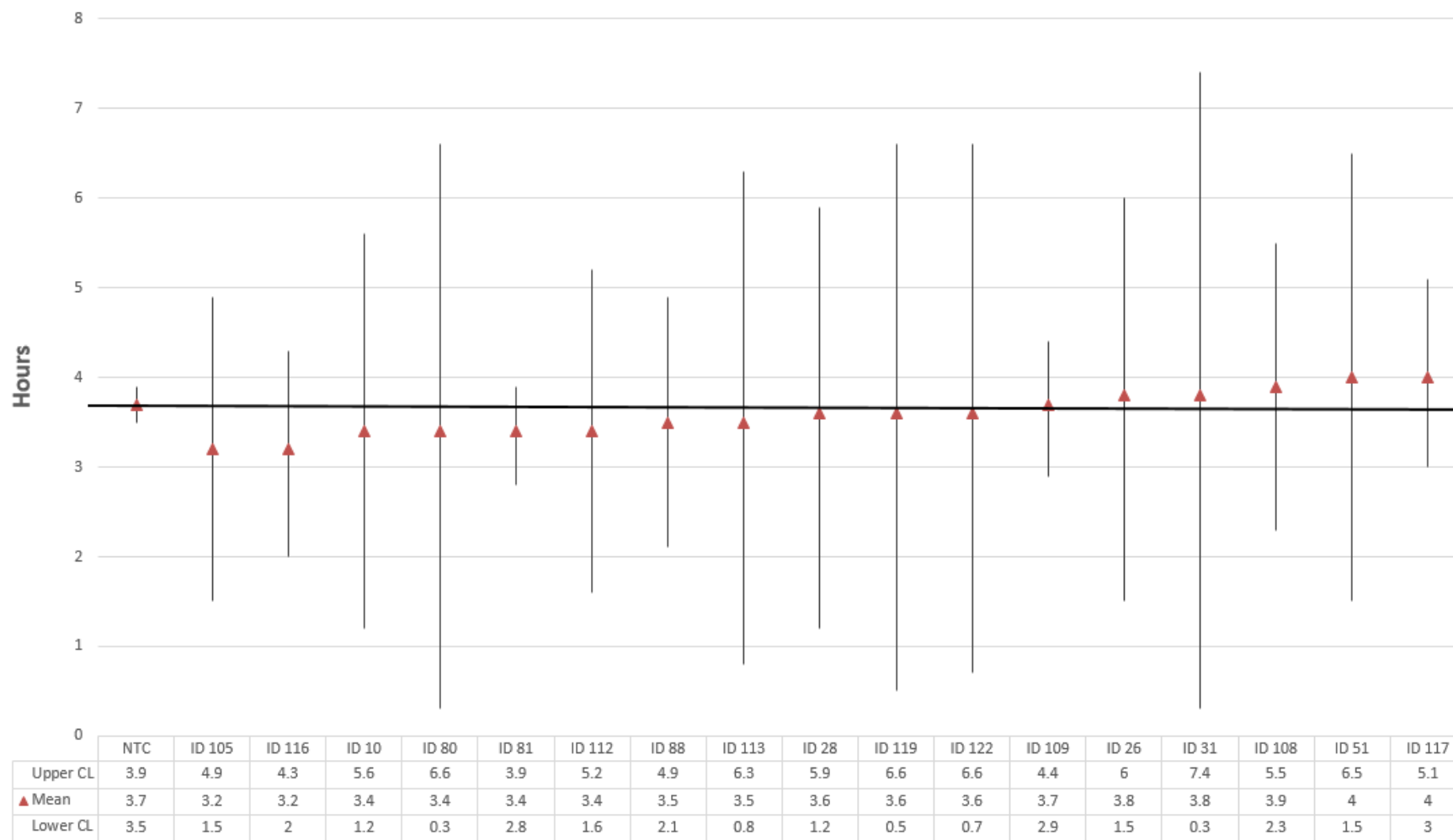
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All Patients Non-Trauma Centers- Average ED LOS (Hours)



Indiana Trauma Registry

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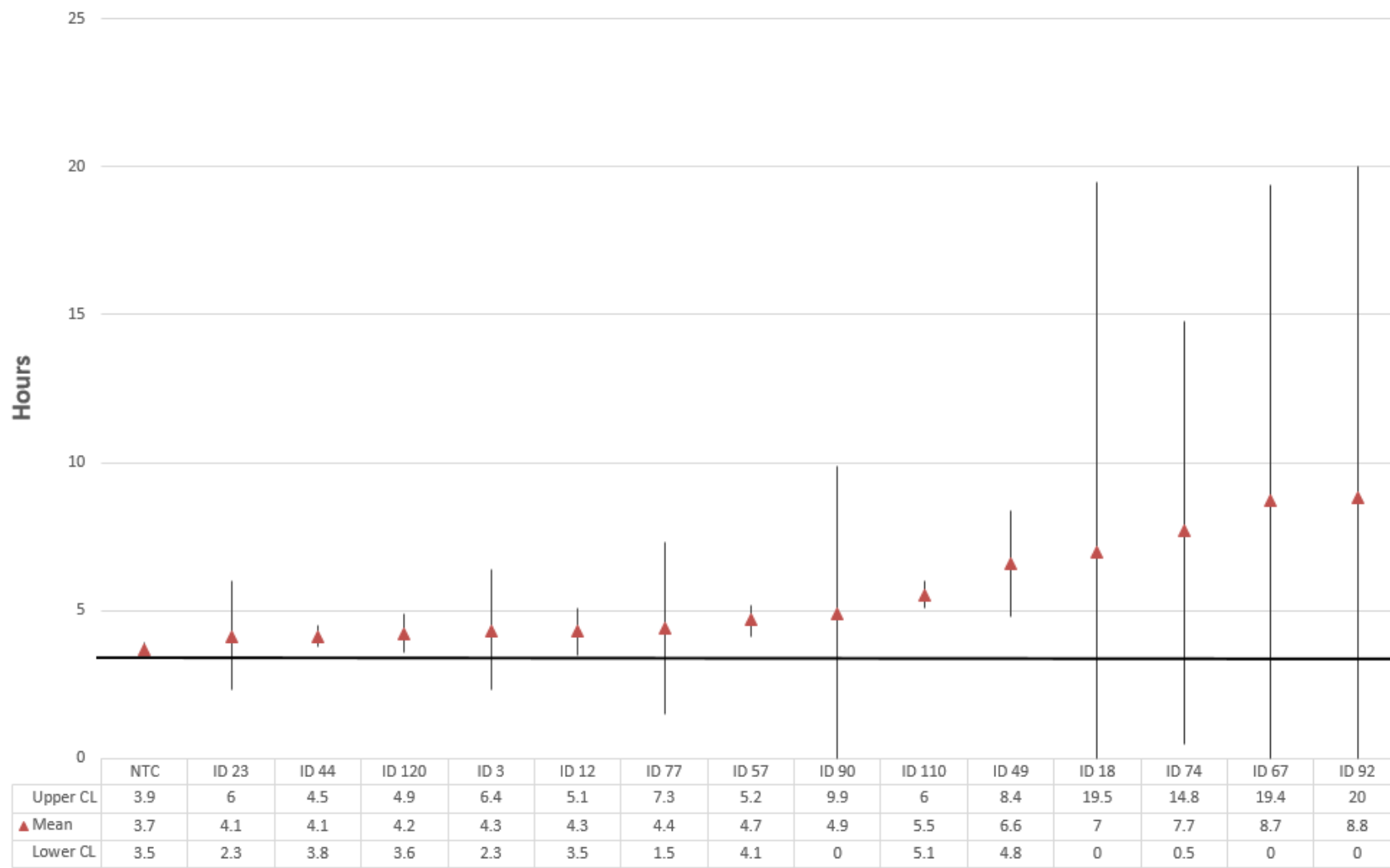
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All Patients Non-Trauma Centers- Average ED LOS (Hours)



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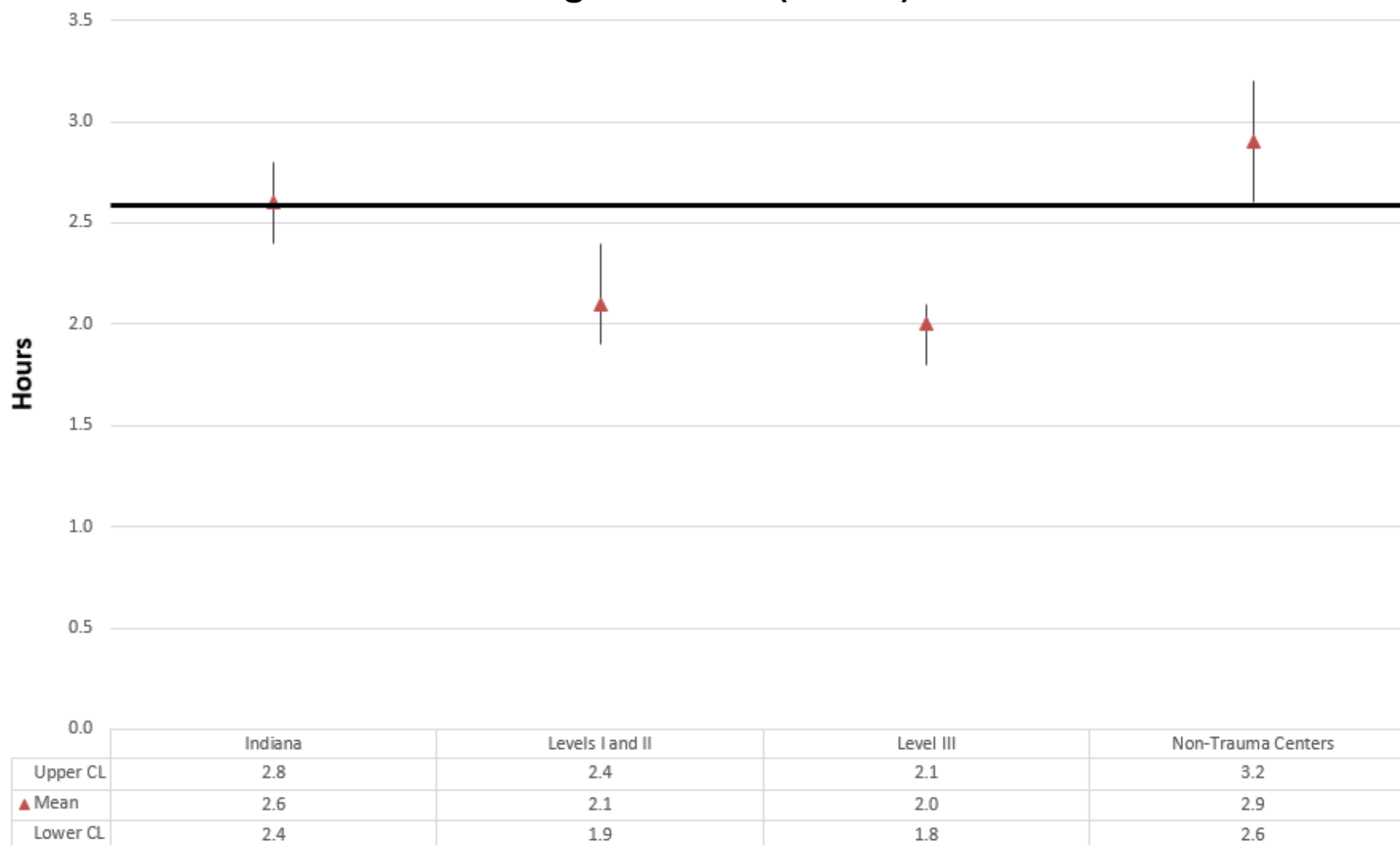
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ED Disposition = Transferred

Average ED LOS (Hours)



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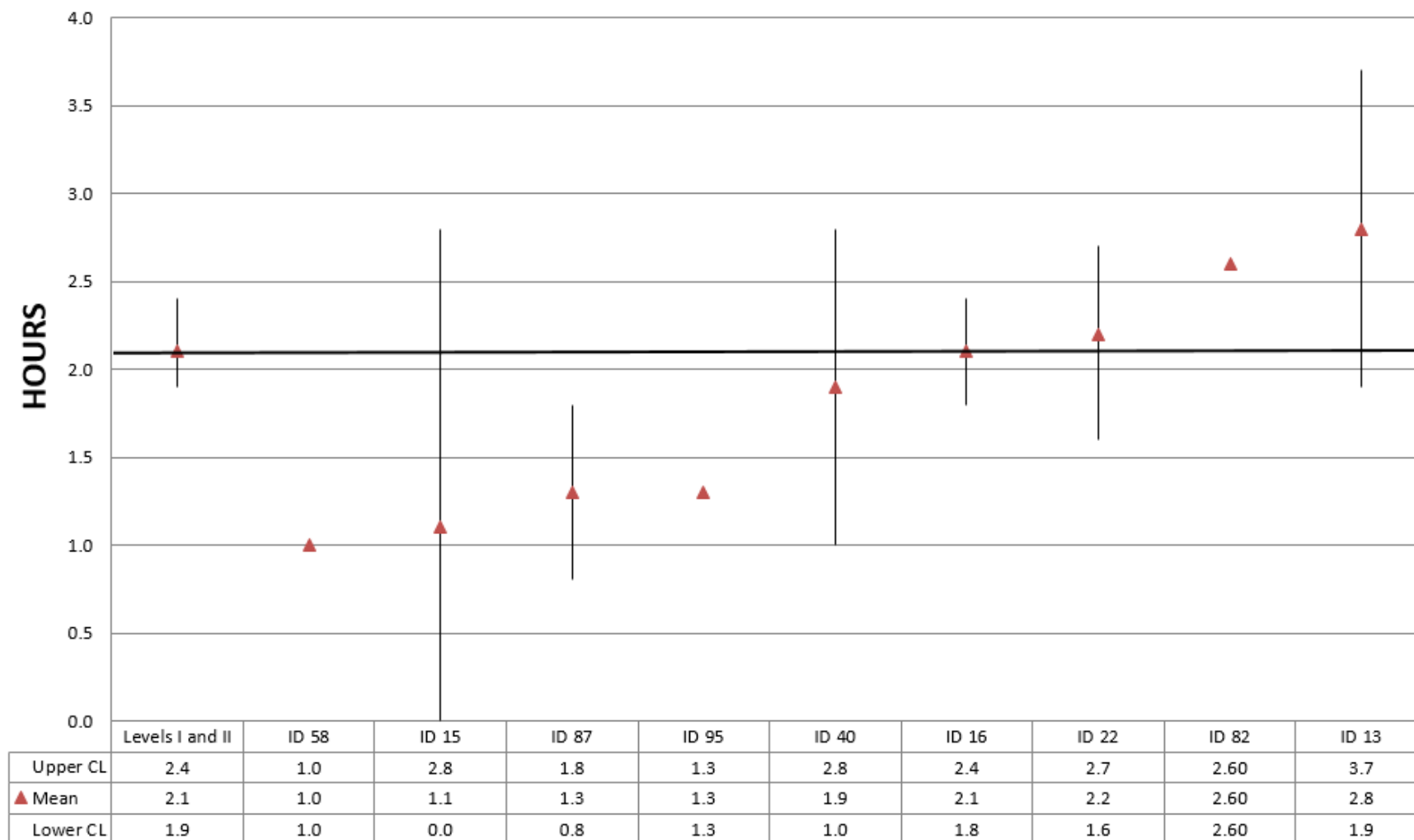
Level I and II: 10 facilities 49.6% of data

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ED Disposition = Transferred

Level I and II Trauma Centers- Average ED LOS (Hours)



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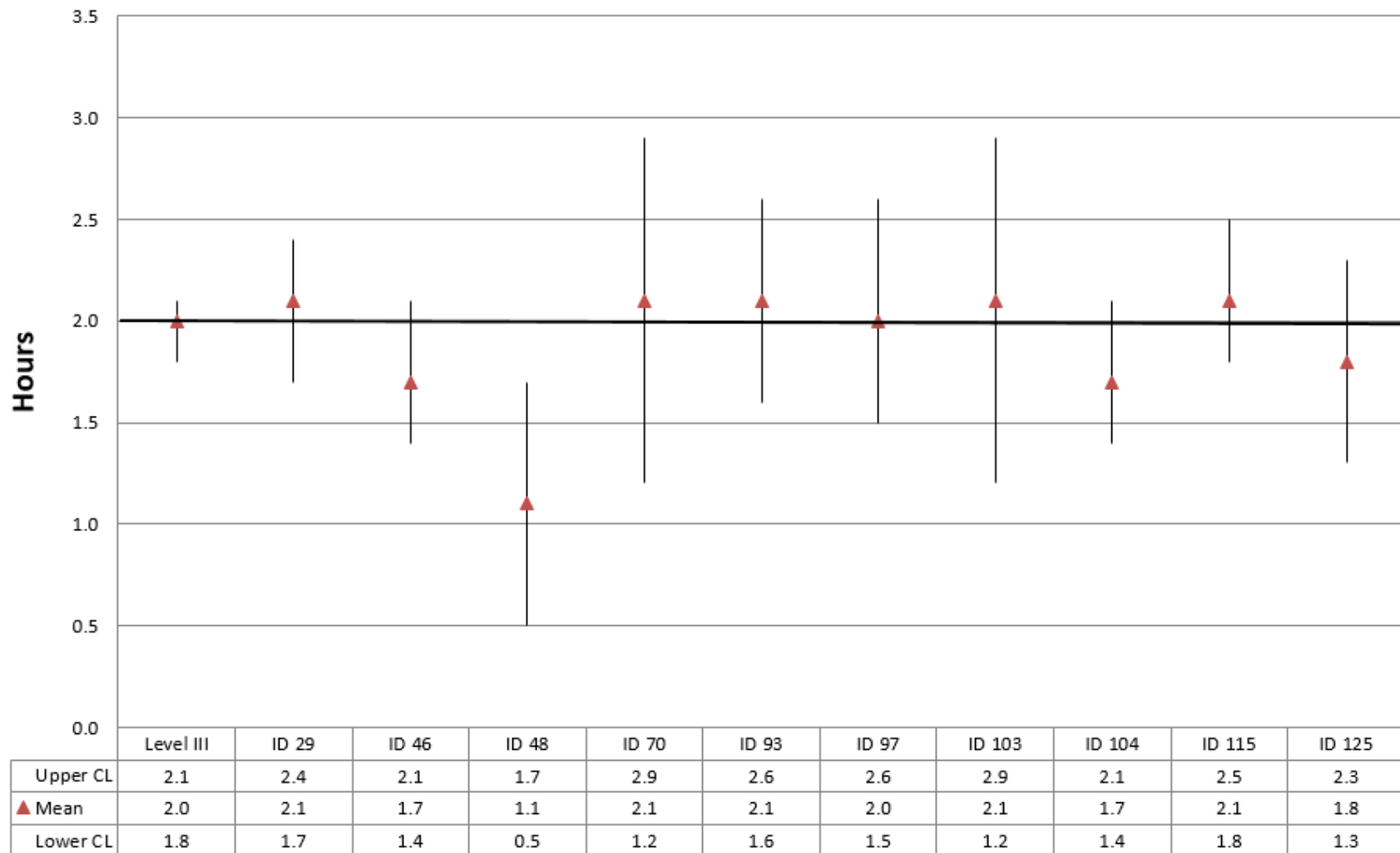
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ED Disposition = Transferred

Level III Trauma Centers- Average ED LOS (Hours)



Indiana Trauma Registry

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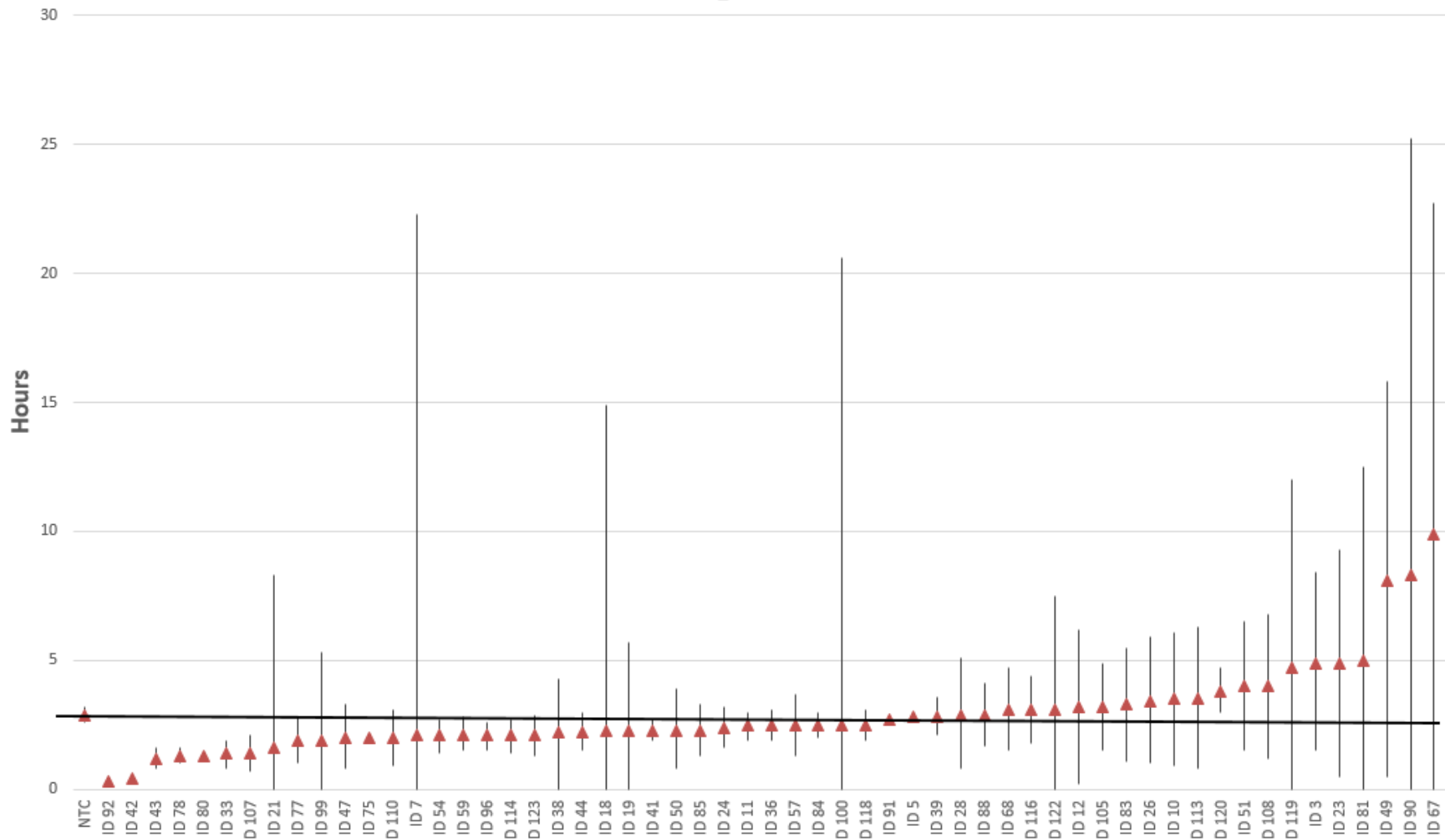
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Non-Trauma Centers
Average ED LOS (Hours)



Indiana Trauma Registry

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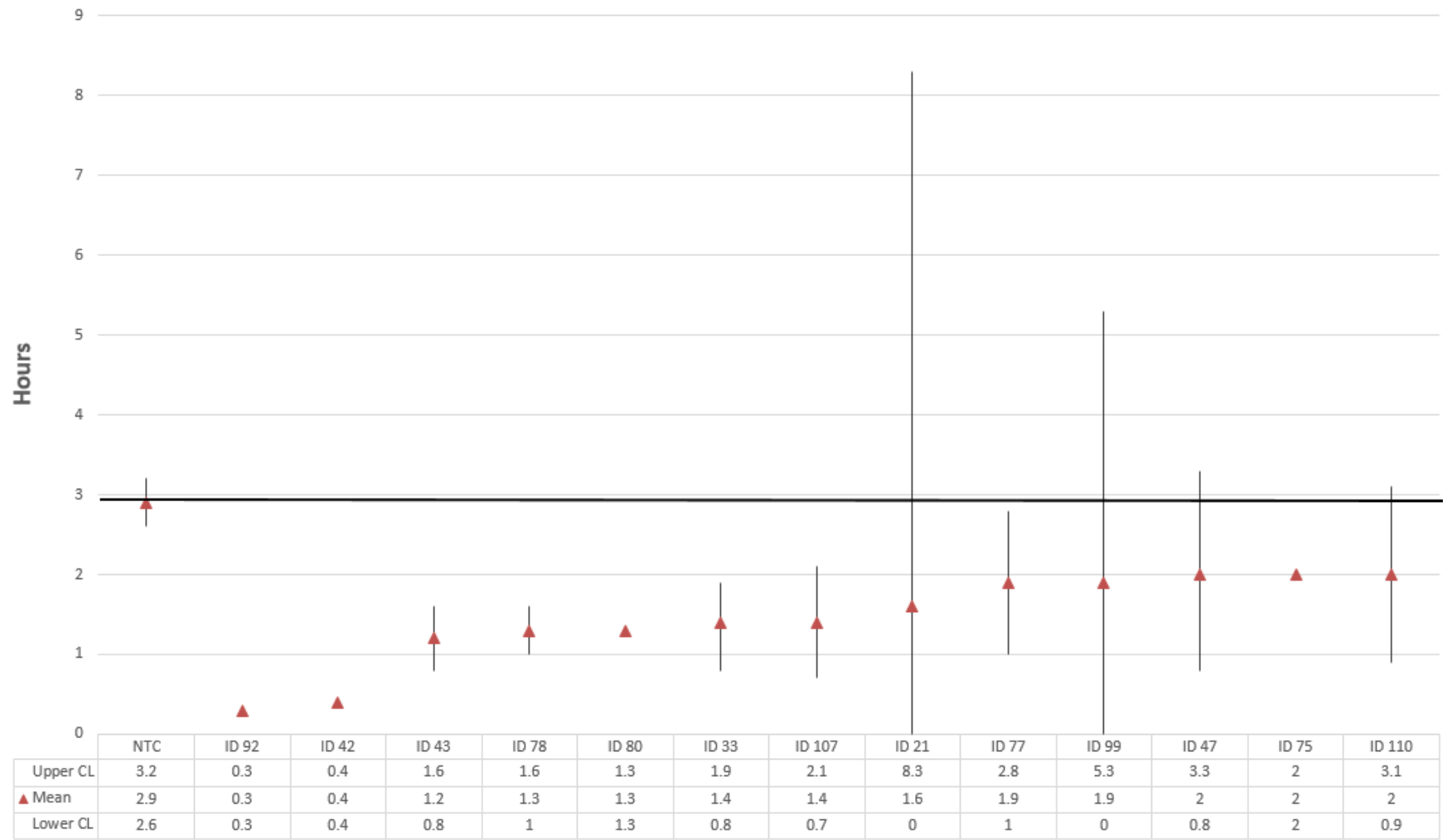
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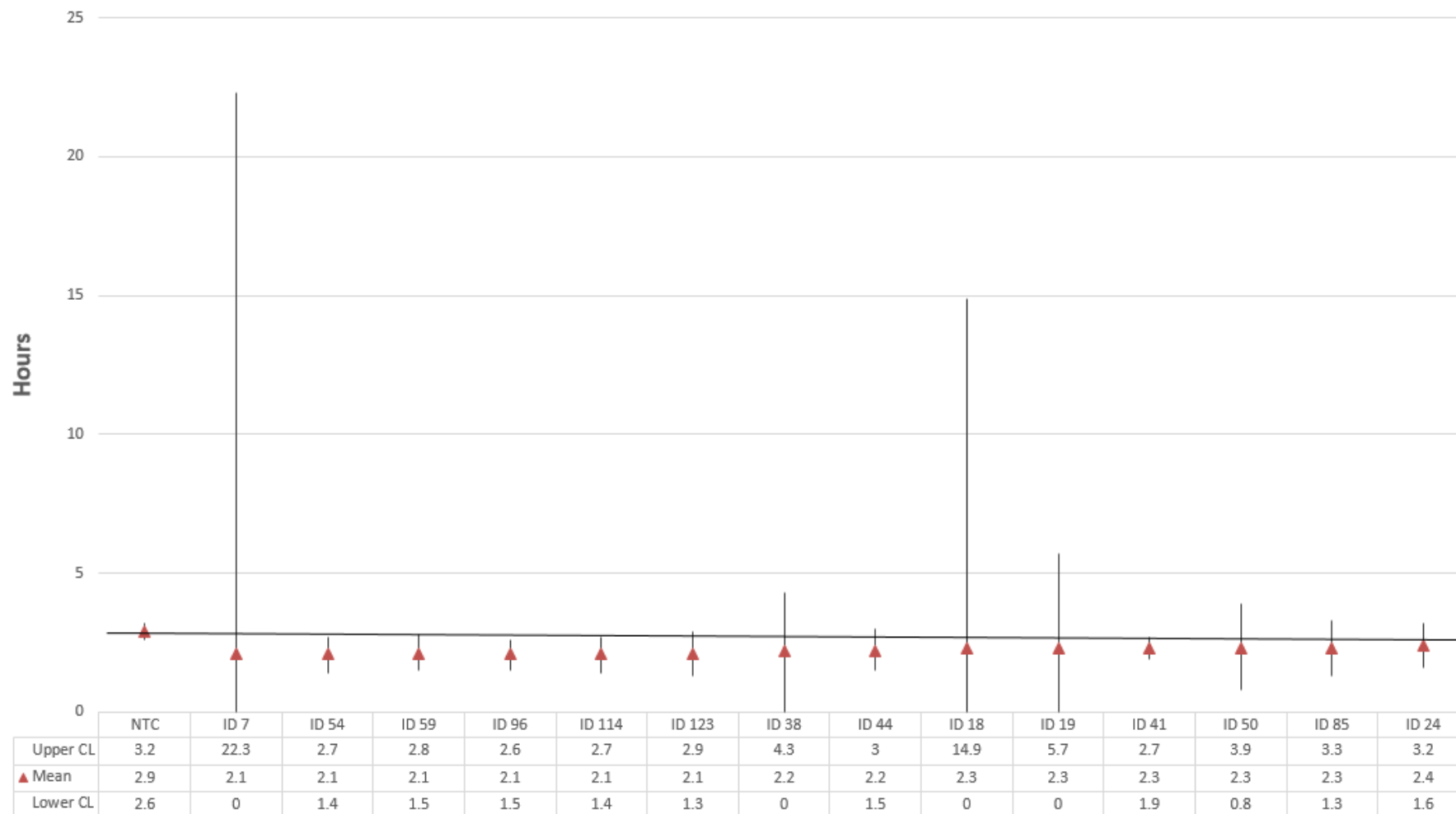
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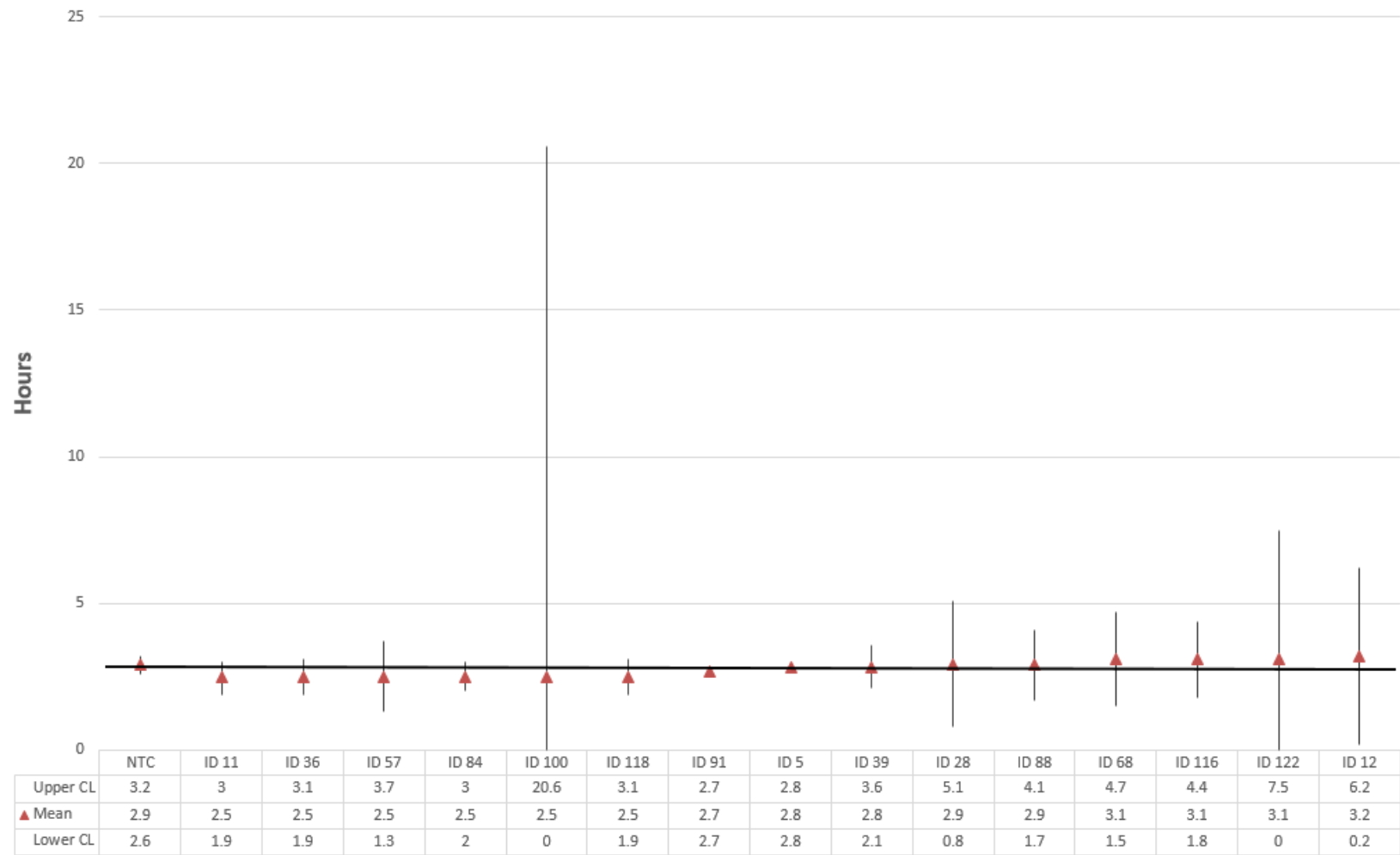
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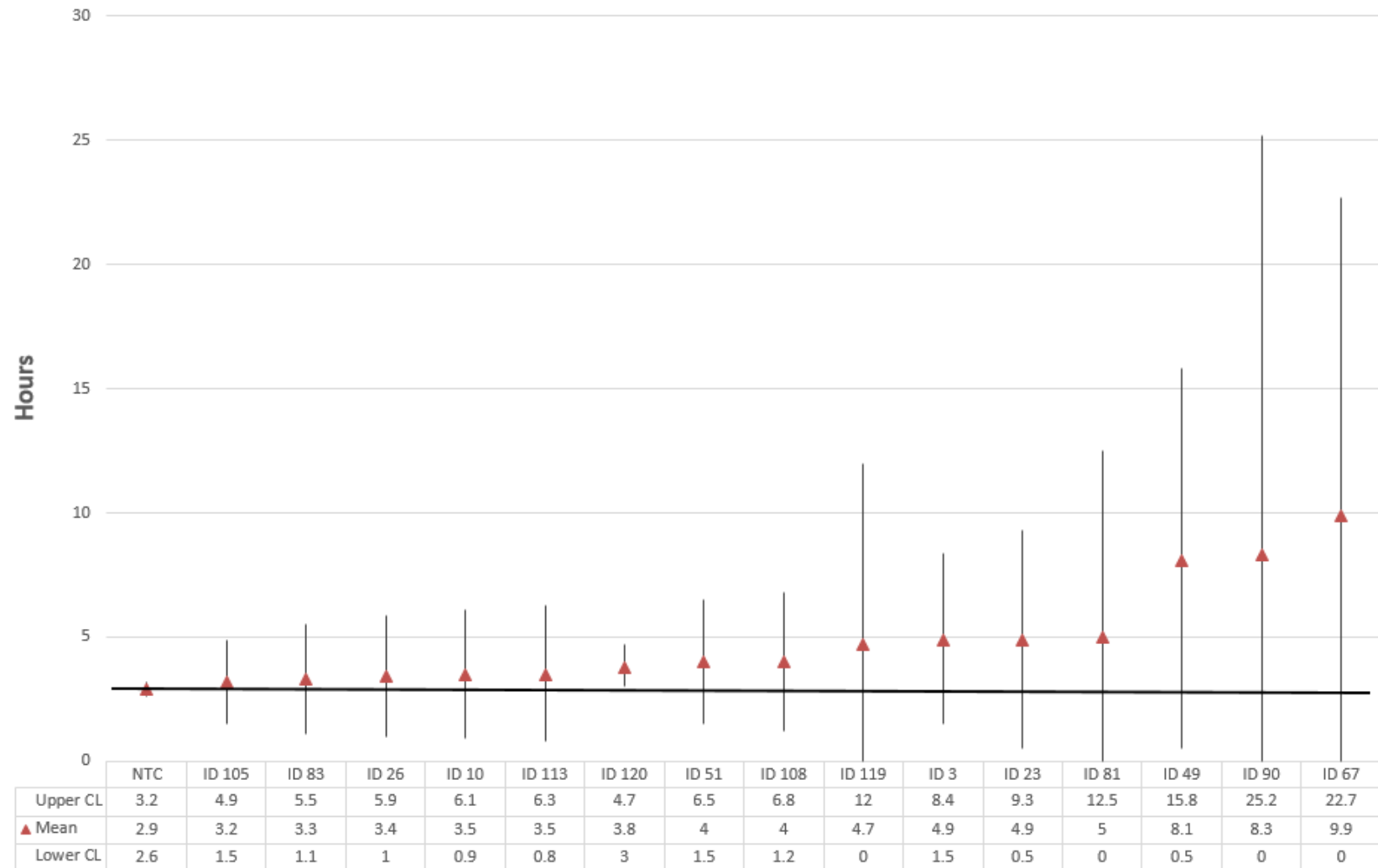
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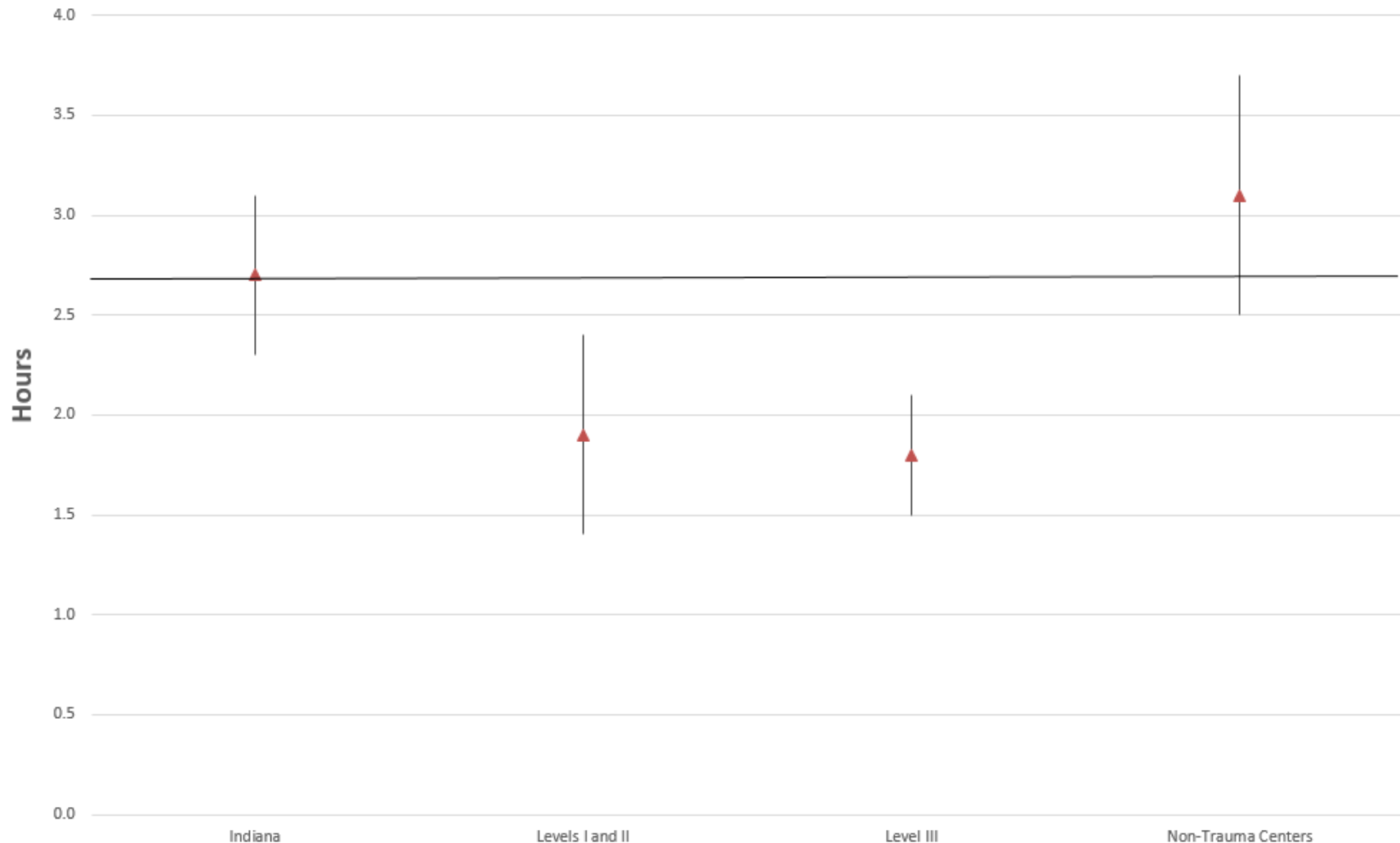
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Critical Patients, ED Disposition = Transferred

Average ED LOS (Hours)



Indiana Trauma Registry

Statewide Quarter 1 Data Report

January 1, 2017—March 31, 2017

7,805 Incidents

92 Total Hospitals Reporting

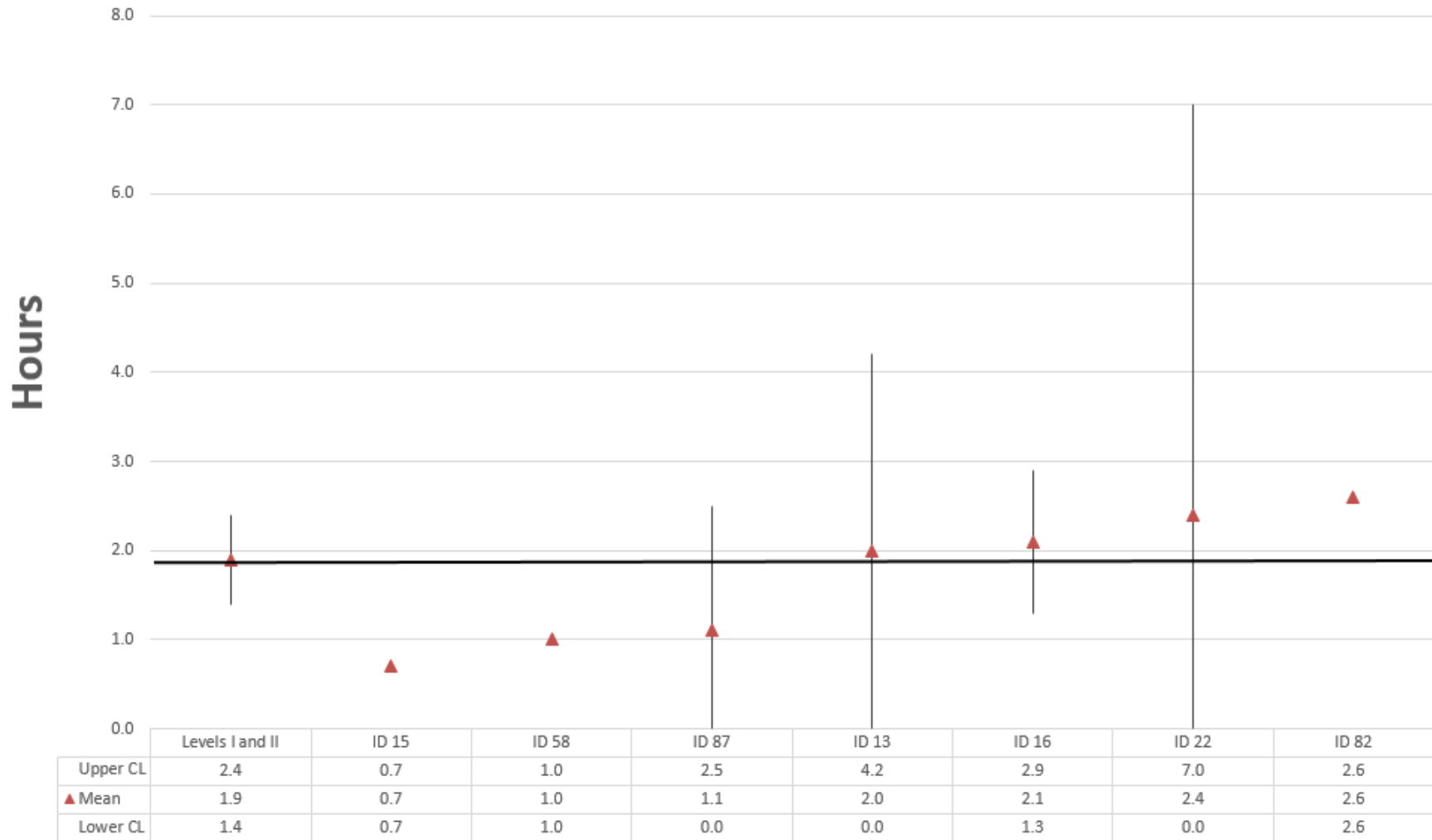
Level I and II: 10 facilities 49.6% of data

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Level I and II Trauma Centers - Average ED LOS (Hours)



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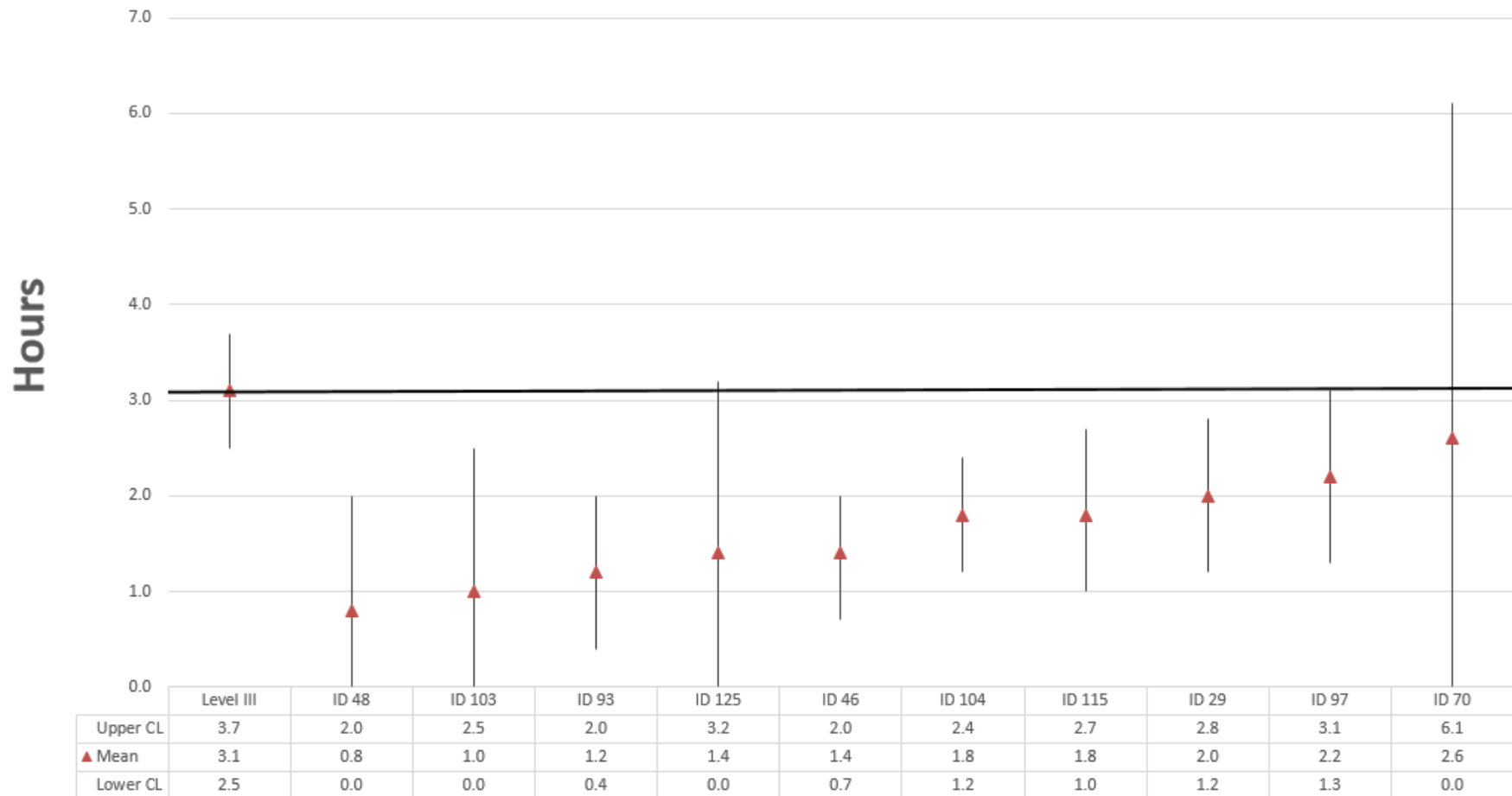
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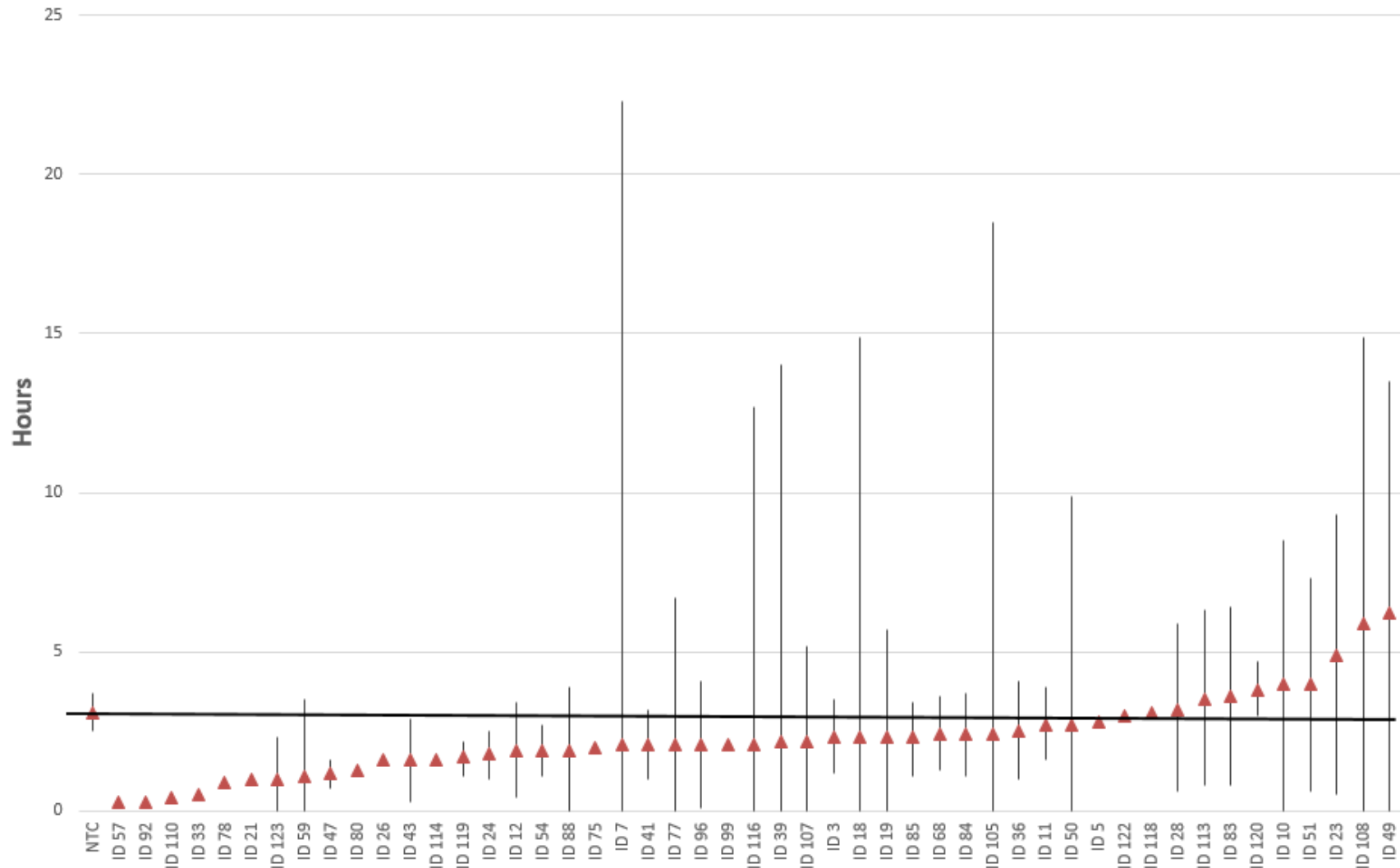
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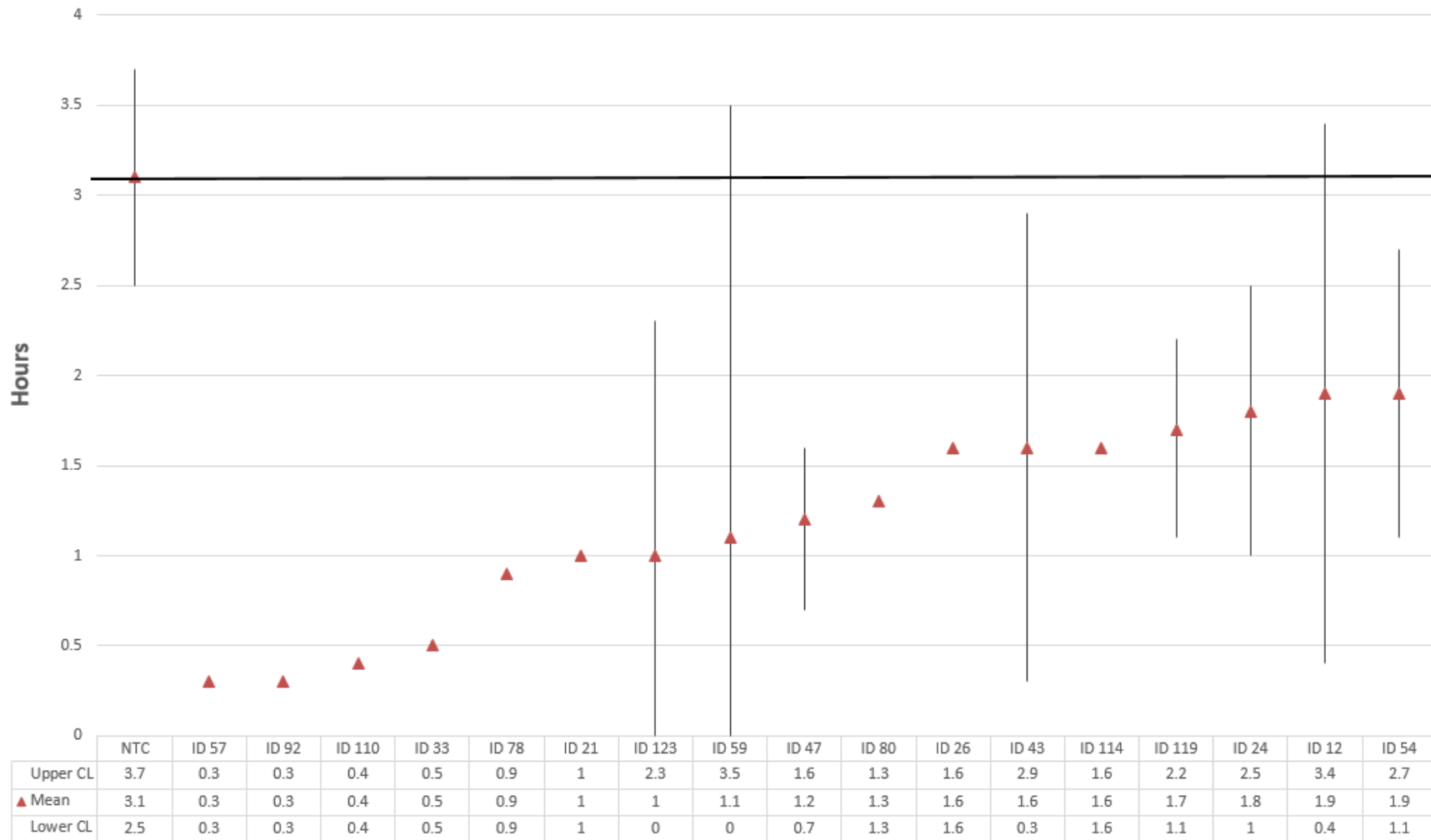
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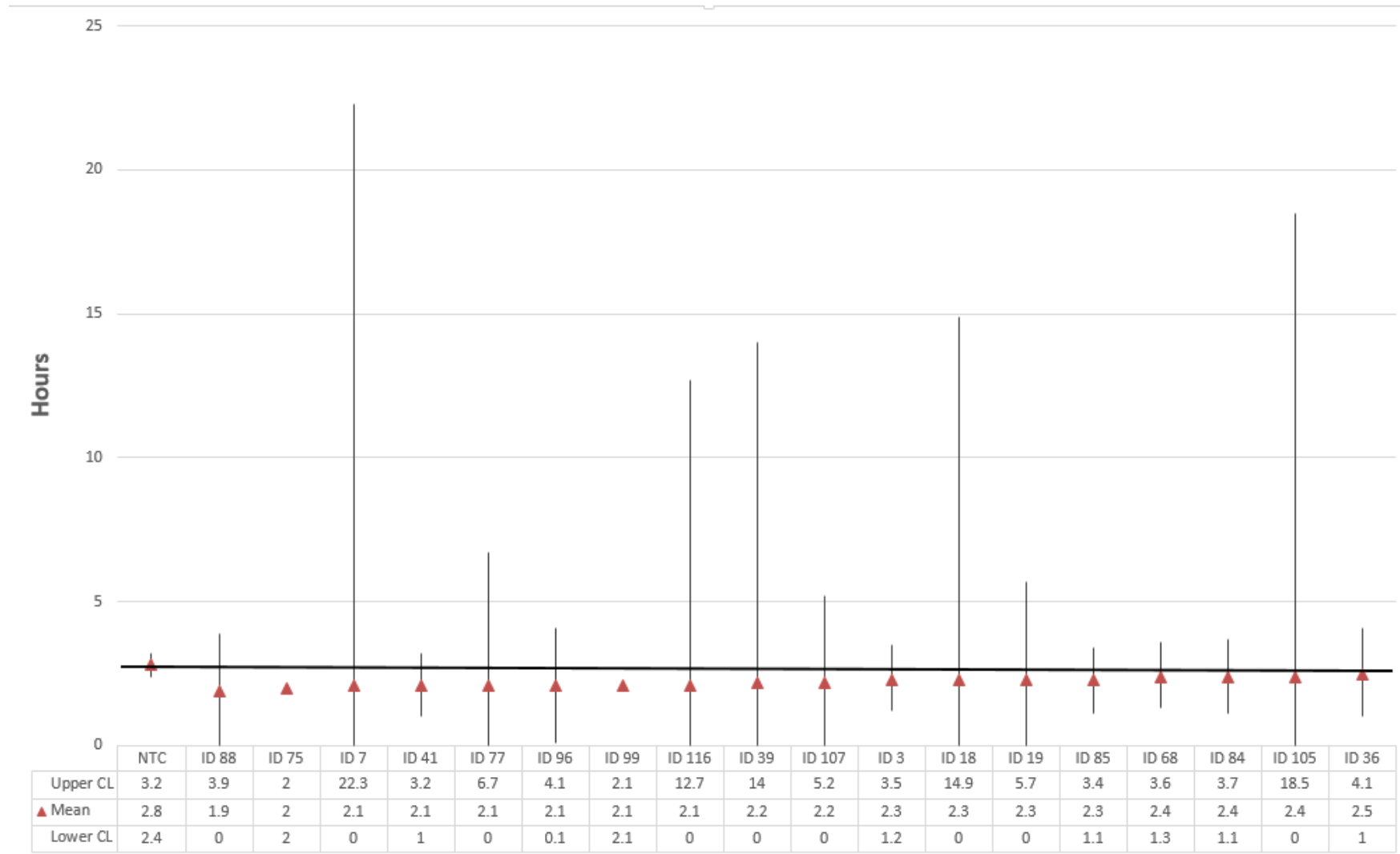
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Statewide Quarter 1 Data Report

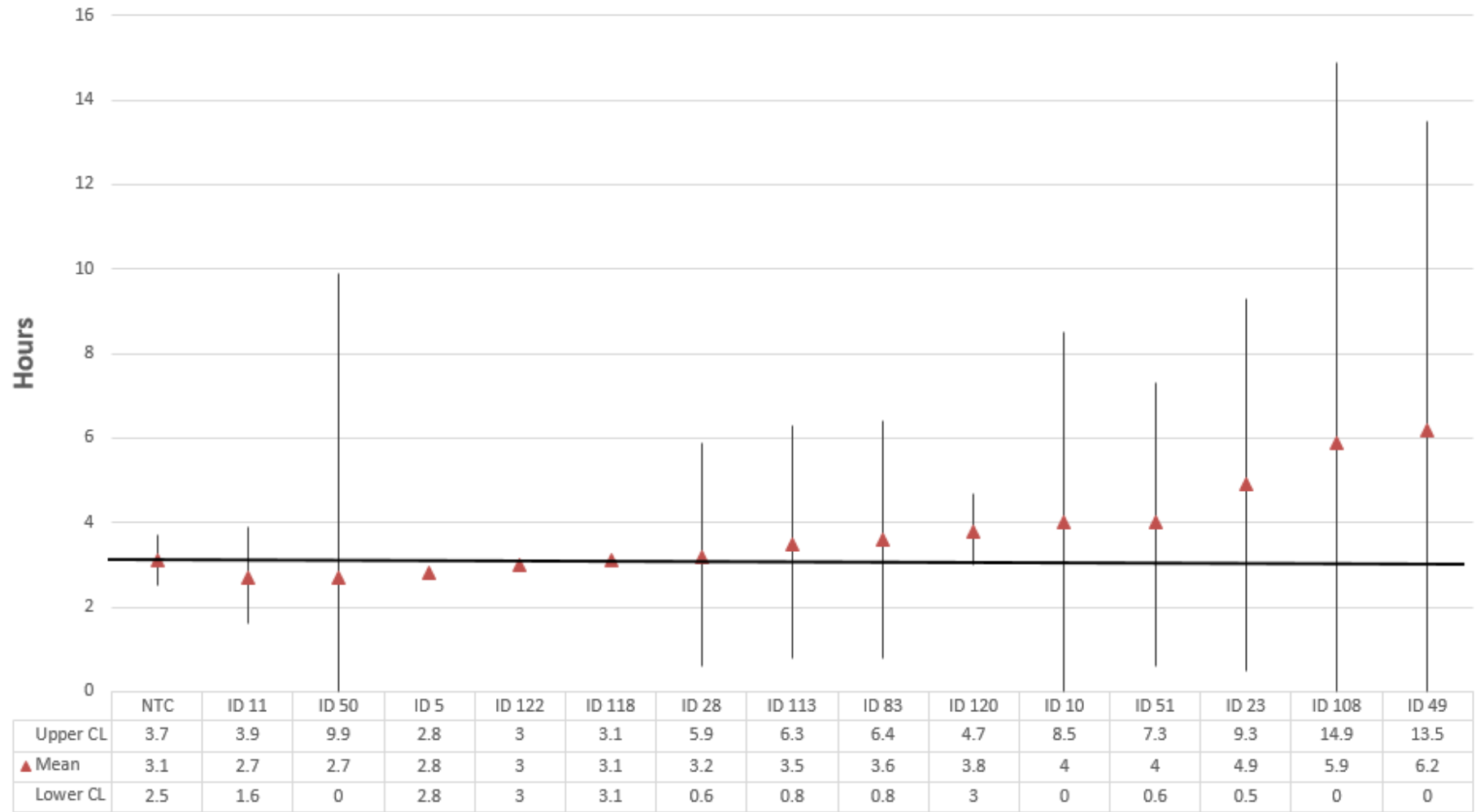
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ED Length of Stay

ED Length of Stay (minutes)				
	Indiana Average	Level I and II	Level III	NTC
N=	2507	263	387	1857
Average	197	175	119	216
Std. Deviation	190	154	74	206
Minimum	0	1	4	0
Quartile 1	96	73	64	109
Median	160	142	110	174
Quartile 3	240	238	163	255
Maximum	2102	1323	440	2102

ED Disposition

ED Disposition (count)				
	Indiana	Level I and II	Level III	NTC
Floor Bed	3532	1682	568	1282
ICU	1013	854	93	66
Transferred	1210	110	281	819
OR	571	437	86	48
Home w/o Services	224	161	58	5
Observation	349	192	43	114
Step-Down	421	186	76	159
Expired	80	46	18	16
NK/NR/NA	374	187	58	129
AMA	8	5	3	0
Home w/ Services	3	2	0	1
Other	20	11	3	6
Grand total	7805	3873	1287	2645

*A bar graph of ED Disposition is found on page 2.

*A bar graph of ED Length of Stay is found on page 2.

Indiana Trauma Registry

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ED Length of Stay by ISS

ED Length of Stay (minutes)								
ISS Category	Indiana Average	Indiana Average	Level I and II	Level I and II	Level III	Level III	Non-Trauma Centers	Non-Trauma Centers
	Counts	Minutes	Counts	Minutes	Counts	Minutes	Counts	Minutes
1-8	1308	206	209	203	227	123	872	228
9-15	905	194	65	146	130	122	710	210
16-24	89	117	12	54	36	103	41	147
25-44	59	121	12	98	15	68	32	155
45-74	10	96	6	81	2	115	2	123
75	9	116	7	125	2	92	0	-
No ISS	245	216	0	-	1	161	244	217

*A Box and Whisker plot of ED Length of Stay by ISS is found on page 5.

Indiana Trauma Registry

Statewide Quarter 1 Data Report January 1, 2017—March 31, 2017 7,805 Incidents

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ED Disposition (count) by ISS Category

	Floor Bed	ICU	Transferred	OR	Observation	NK/NR/ NA	Step- Down	Home w/o Services	Expired	Other	AMA	Home w/ Services	Total
1-8	1618	297	611	237	242	128	177	191	16	13	6	3	3539
9-15	1547	315	388	201	77	168	158	26	15	1	2	0	2898
16-24	122	227	63	67	7	13	44	3	12	0	0	0	558
25-44	28	149	31	50	0	11	19	0	19	0	0	0	307
45-74	0	9	3	7	0	0	0	0	7	0	0	0	26
75	1	9	2	6	0	1	0	0	9	0	0	0	28
NO ISS	216	7	112	3	23	53	23	4	2	6	0	0	449
Total	3532	1013	1210	571	349	374	421	224	80	20	8	3	7805

*Bar graph of ED Disposition by ISS is found on page 22.

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General Report:

- The caterpillar plots with the anonymous ID's for all patients per hospital may be found on pages 30-36.
- The caterpillar plots with the anonymous ID's for transferred patients per hospital may be found on pages 37-44.
- The caterpillar plots with the anonymous ID's for critical transferred patients per hospital may be found on pages 45-51.
- Reference tables now accompany the graphs for demographic data on pages 25-28 and 52-54.